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STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION

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February 4, 1992

TO: Trustee Council, Exxon Valdez Oil Spill Settlement

FROM: John A. Sandor, ADEC Commissioner
Trustee Council Member

SUBJECT: PROPOSAL TO ESTABLISH A SETTLEMENT ENDOWMENT FUND

Both Governor Walter Hickel and Secretary of the Interior, Manuel Lujan have proposed that a substantial part of the Exxon Valdez Oil Spill Settlement funds be placed in an Endowment or Trust Fund for the perpetual funding of important programs and projects.

Mead Treadwell, Deputy Commissioner of ADEC, and my alternate to the Trustee Council has developed three possible scenarios which project expenditures and income into the future. These are displayed in the enclosures.

It is my recommendation that these be referred to the Restoration Team for evaluation. The team should, of course, consider other alternative endowment options, and develop recommendations for consideration by the Trustee Council.

DRAFT:

GUIDANCE FOR EXXON VALDEZ SETTLEMENT FINANCIAL POLICY

1. All receipts net of reimbursements, from this point forward, to endowment fund to be created.

   Expenditures this year of _____ and next year of _____. All further expenses limited to endowment income.

2. All expenditures in years forward to come as a result of competitive proposals... open to scientific and research institutions, municipalities, landowners, and agencies. Proposals to be reviewed by public advisory group; approved by Trustees. Trustees may issue RFP's as well as accept unsolicited proposals, as a public or private foundation would.

3. Trustee and public advisory group expenses to be limited to 10% of endowment income. All other overhead tied to projects.

4. Endowment assets shall consist of invested funds, information resources, and property held in trust for the people of Alaska and the United States. Assets may also be transferred to private, non-profit trusts, local, state or federal entities.

DRAFT:

ANALYSIS OF EXPENSE SCENARIOS ON EXXON VALDEZ ENDOWMENT

	Case One Limit expenses to income		Case Two Levelize expenses at $20 million		Case Three Level expenses at $20 million plus overhead, then limit to income in later years	
	O/H	Restoration	O/H	Restoration	O/H	Restoration
1992	.34	3.03	7.00	20.00	7.00	20.00
1993	1.01	9.13	5.00	20.00	5.00	20.00
1994	1.48	13.28	3.50	20.00	3.50	20.00
2001	4.71	42.36	3.50	20.00	3.50	39.15
Cum. expenses by EOY 2001		246.41		202.34		209.79
Endowment by 2001		635.00		594.84		579.81

Common Assumptions:

1. All figures in millions of dollars.
2. Inflation proofing/inflation increases to expenditures begin 2001.
3. Endowment earnings 8% per year.

MT/das

Case Number One: Spend only what the endowment produces in income

Assumptions				1991		Years to collect			
				Reimbursement		remainder due			
State Reimbursement due			115	29		5			
Federal Reimbursement due			100	24.5		5			
Exxon Reimbursement due			50	0		1			

	Receipts by		Reimbursements to:			To	BOY Endowmen	Interest	Endowmen
Year	Month	Amount	State	Federal	Exxon	Endowment	Principa	Rate	Income
1991	12	90	29	24.5	0	36.5	0.00	8.0%	0.24
1992	12	150	17.2	15.1	50	67.7	36.50	8.0%	3.37
1993	9	100	17.2	15.1	0	67.7	104.20	8.0%	10.14
1994	9	70	17.2	15.1	0	37.7	171.90	8.0%	14.76
1995	9	70	17.2	15.1	0	37.7	209.60	8.0%	17.77
1996	9	70	17.2	15.1	0	37.7	247.30	8.0%	20.79
1997	9	70	0	0	0	70	285.00	8.0%	24.67
1998	9	70	0	0	0	70	355.00	8.0%	30.27
1999	9	70	0	0	0	70	425.00	8.0%	35.87
2000	9	70	0	0	0	70	495.00	8.0%	41.47
2001	9	70	0	0	0	70	565.00	8.0%	47.07
2002			0	0	0	0	635.00	8.0%	50.80
2003			0	0	0	0	660.40	8.0%	52.83
2004			0	0	0	0	686.82	8.0%	54.95
2005			0	0	0	0	714.29	8.0%	57.14
2006			0	0	0	0	742.86	8.0%	59.43
2007			0	0	0	0	772.57	8.0%	61.81
2008			0	0	0	0	803.48	8.0%	64.28
2009			0	0	0	0	835.62	8.0%	66.85
2010			0	0	0	0	869.04	8.0%	69.52
2011			0	0	0	0	903.80	8.0%	72.30
2012			0	0	0	0	939.96	8.0%	75.20
2013			0	0	0	0	977.55	8.0%	78.20
2014			0	0	0	0	1016.66	8.0%	81.33
2015			0	0	0	0	1057.32	8.0%	84.59
2016			0	0	0	0	1099.61	8.0%	87.97
2017			0	0	0	0	1143.60	8.0%	91.49
2018			0	0	0	0	1189.34	8.0%	95.15
2019			0	0	0	0	1236.92	8.0%	98.95
2020			0	0	0	0	1286.39	8.0%	102.91
Total		900	115	100	50	635			1652.11

Inflatio Rate	Inflatio Reserve	Income Available	Year	Actual Expenditure Overhead	Projects		EOY Endowment Principal		EOY Cumulative Available
0.0%	0.00	0.24	1991	0.02	0.22		36.50		0.24
0.0%	0.00	3.37	1992	0.34	3.03		104.20		3.61
0.0%	0.00	10.14	1993	1.01	9.13		171.90		13.76
0.0%	0.00	14.76	1994	1.48	13.28		209.60		28.51
0.0%	0.00	17.77	1995	1.78	16.00		247.30		46.29
0.0%	0.00	20.79	1996	2.08	18.71		285.00		67.08
0.0%	0.00	24.67	1997	2.47	22.20		355.00		91.74
0.0%	0.00	30.27	1998	3.03	27.24		425.00		122.01
0.0%	0.00	35.87	1999	3.59	32.28		495.00		157.88
0.0%	0.00	41.47	2000	4.15	37.32		565.00		199.34
0.0%	0.00	47.07	2001	4.71	42.36		635.00		246.41
4.0%	25.40	25.40	2002	2.54	22.86		660.40		271.81
4.0%	26.42	26.42	2003	2.64	23.77		686.82		298.23
4.0%	27.47	27.47	2004	2.75	24.73		714.29		325.70
4.0%	28.57	28.57	2005	2.86	25.71		742.86		354.27
4.0%	29.71	29.71	2006	2.97	26.74		772.57		383.98
4.0%	30.90	30.90	2007	3.09	27.81		803.48		414.89
4.0%	32.14	32.14	2008	3.21	28.93		835.62		447.03
4.0%	33.42	33.42	2009	3.34	30.08		869.04		480.45
4.0%	34.76	34.76	2010	3.48	31.29		903.80		515.21
4.0%	36.15	36.15	2011	3.62	32.54		939.96		551.36
4.0%	37.60	37.60	2012	3.76	33.84		977.55		588.96
4.0%	39.10	39.10	2013	3.91	35.19		1016.66		628.06
4.0%	40.67	40.67	2014	4.07	36.60		1057.32		668.73
4.0%	42.29	42.29	2015	4.23	38.06		1099.61		711.02
4.0%	43.98	43.98	2016	4.40	39.59		1143.60		755.01
4.0%	45.74	45.74	2017	4.57	41.17		1189.34		800.75
4.0%	47.57	47.57	2018	4.76	42.82		1236.92		848.33
4.0%	49.48	49.48	2019	4.95	44.53		1286.39		897.80
4.0%	51.46	51.46	2020	5.15	46.31		1337.85		949.26
	702.85	949.26		94.93	854.33		1337.85		

Case Number Three: Current trends plus endowment

Assumptions				1991		Years to collect			
				Reimbursement		remainder due			
State Reimbursement due			115	29		5			
Federal Reimbursement due			100	24.5		5			
Exxon Reimbursement due			50	0		1			

	Receipts by		Reimbursements to:				BOY		
						To	Endowmen	Interest	Endowmen
Year	Month	Amount	State	Federal	Exxon	Endowment	Principa	Rate	Income
1991	12	90	29	24.5	0	36.5	0.00	8.0%	0.24
1992	12	150	17.2	15.1	50	67.7	34.24	8.0%	3.19
1993	9	100	17.2	15.1	0	67.7	78.13	8.0%	8.06
1994	9	70	17.2	15.1	0	37.7	128.89	8.0%	11.32
1995	9	70	17.2	15.1	0	37.7	154.41	8.0%	13.36
1996	9	70	17.2	15.1	0	37.7	192.11	8.0%	16.37
1997	9	70	0	0	0	70	229.81	8.0%	20.25
1998	9	70	0	0	0	70	299.81	8.0%	25.85
1999	9	70	0	0	0	70	369.81	8.0%	31.45
2000	9	70	0	0	0	70	439.81	8.0%	37.05
2001	9	70	0	0	0	70	509.81	8.0%	42.65
2002			0	0	0	0	579.81	8.0%	46.38
2003			0	0	0	0	603.00	8.0%	48.24
2004			0	0	0	0	627.12	8.0%	50.17
2005			0	0	0	0	652.20	8.0%	52.18
2006			0	0	0	0	678.29	8.0%	54.26
2007			0	0	0	0	705.42	8.0%	56.43
2008			0	0	0	0	733.64	8.0%	58.69
2009			0	0	0	0	762.99	8.0%	61.04
2010			0	0	0	0	793.51	8.0%	63.48
2011			0	0	0	0	825.25	8.0%	66.02
2012			0	0	0	0	858.26	8.0%	68.66
2013			0	0	0	0	892.59	8.0%	71.41
2014			0	0	0	0	928.29	8.0%	74.26
2015			0	0	0	0	965.42	8.0%	77.23
2016			0	0	0	0	1004.04	8.0%	80.32
2017			0	0	0	0	1044.20	8.0%	83.54
2018			0	0	0	0	1085.97	8.0%	86.88
2019			0	0	0	0	1129.41	8.0%	90.35
2020			0	0	0	0	1174.58	8.0%	93.97
Total		900	115	100	50	635			1493.31

Inflatio Rate	Inflatio Reserve	Income Available	Year	Actual Overhead	Expenditure Projects		EOY Endowment Principal		EOY Cumulative Available
0.0%	0.00	0.24	1991	0.50	2.00		34.24		0.24
0.0%	0.00	3.19	1992	7.00	20.00		78.13		3.43
0.0%	0.00	8.06	1993	5.00	20.00		128.89		11.49
0.0%	0.00	11.32	1994	3.50	20.00		154.41		22.81
0.0%	0.00	13.36	1995	3.50	9.86		192.11		36.16
0.0%	0.00	16.37	1996	3.50	12.87		229.81		52.54
0.0%	0.00	20.25	1997	3.50	16.75		299.81		72.79
0.0%	0.00	25.85	1998	3.50	22.35		369.81		98.64
0.0%	0.00	31.45	1999	3.50	27.95		439.81		130.09
0.0%	0.00	37.05	2000	3.50	33.55		509.81		167.14
0.0%	0.00	42.65	2001	3.50	39.15		579.81		209.79
4.0%	23.19	23.19	2002	3.50	19.69		603.00		232.99
4.0%	24.12	24.12	2003	3.64	20.48		627.12		257.11
4.0%	25.08	25.08	2004	3.79	21.30		652.20		282.19
4.0%	26.09	26.09	2005	3.94	22.15		678.29		308.28
4.0%	27.13	27.13	2006	4.09	23.04		705.42		335.41
4.0%	28.22	28.22	2007	4.26	23.96		733.64		363.63
4.0%	29.35	29.35	2008	4.43	24.92		762.99		392.97
4.0%	30.52	30.52	2009	4.61	25.91		793.51		423.49
4.0%	31.74	31.74	2010	4.79	26.95		825.25		455.23
4.0%	33.01	33.01	2011	4.98	28.03		858.26		488.24
4.0%	34.33	34.33	2012	5.18	29.15		892.59		522.57
4.0%	35.70	35.70	2013	5.39	30.32		928.29		558.28
4.0%	37.13	37.13	2014	5.60	31.53		965.42		595.41
4.0%	38.62	38.62	2015	5.83	32.79		1004.04		634.03
4.0%	40.16	40.16	2016	6.06	34.10		1044.20		674.19
4.0%	41.77	41.77	2017	6.30	35.46		1085.97		715.95
4.0%	43.44	43.44	2018	6.56	36.88		1129.41		759.39
4.0%	45.18	45.18	2019	6.82	38.36		1174.58		804.57
4.0%	46.98	46.98	2020	7.09	39.89		1221.57		851.55
	641.76	851.55		137.35	769.40				

EOY	
Cumulative	
Spent	Net
2.50	-2.26
29.50	-26.07
54.50	-43.01
78.00	-55.19
91.36	-55.19
107.73	-55.19
127.98	-55.19
153.83	-55.19
185.29	-55.19
222.34	-55.19
264.99	-55.19
288.18	-55.19
312.30	-55.19
337.38	-55.19
363.47	-55.19
390.60	-55.19
418.82	-55.19
448.17	-55.19
478.69	-55.19
510.43	-55.19
543.44	-55.19
577.77	-55.19
613.47	-55.19
650.60	-55.19
689.22	-55.19
729.38	-55.19
771.15	-55.19
814.59	-55.19
859.76	-55.19
906.75	-55.19

EOY	
Cumulative	
Spent	Net
0.24	0.00
3.61	0.00
13.76	0.00
28.51	0.00
46.29	0.00
67.08	0.00
91.74	0.00
122.01	0.00
157.88	0.00
199.34	0.00
246.41	0.00
271.81	0.00
298.23	0.00
325.70	0.00
354.27	0.00
383.98	0.00
414.89	0.00
447.03	0.00
480.45	0.00
515.21	0.00
551.36	0.00
588.96	0.00
628.06	0.00
668.73	0.00
711.02	0.00
755.01	0.00
800.75	0.00
848.33	0.00
897.80	0.00
949.26	0.00

Case Number Two: Levelized expenditures of $20 million plus overhead

Assumptions		1991 Reimbursement	Years to collect remainder due
State Reimbursement due	115	29	5
Federal Reimbursement due	100	24.5	5
Exxon Reimbursement due	50	0	1

Year	Receipts by Month	Amount	Reimbursements to: State	Federal	Exxon	To Endowment		BOY Endowment Principal	Interest Rate	Endowment Income
1991	12	90	29	24.5	0	36.5		0.00	8.0%	0.24
1992	12	150	17.2	15.1	50	67.7		34.24	8.0%	3.19
1993	9	100	17.2	15.1	0	67.7		78.13	8.0%	8.06
1994	9	70	17.2	15.1	0	37.7		128.89	8.0%	11.32
1995	9	70	17.2	15.1	0	37.7		154.41	8.0%	13.36
1996	9	70	17.2	15.1	0	37.7		181.96	8.0%	15.56
1997	9	70	0	0	0	70		211.73	8.0%	18.80
1998	9	70	0	0	0	70		277.03	8.0%	24.03
1999	9	70	0	0	0	70		347.56	8.0%	29.67
2000	9	70	0	0	0	70		423.73	8.0%	35.77
2001	9	70	0	0	0	70		506.00	8.0%	42.35
2002			0	0	0	0		594.84	8.0%	47.59
2003			0	0	0	0		618.93	8.0%	49.51
2004			0	0	0	0		644.01	8.0%	51.52
2005			0	0	0	0		670.11	8.0%	53.61
2006			0	0	0	0		697.28	8.0%	55.78
2007			0	0	0	0		725.58	8.0%	58.05
2008			0	0	0	0		755.03	8.0%	60.40
2009			0	0	0	0		785.70	8.0%	62.86
2010			0	0	0	0		817.63	8.0%	65.41
2011			0	0	0	0		850.88	8.0%	68.07
2012			0	0	0	0		885.50	8.0%	70.84
2013			0	0	0	0		921.55	8.0%	73.72
2014			0	0	0	0		959.10	8.0%	76.73
2015			0	0	0	0		998.21	8.0%	79.86
2016			0	0	0	0		1038.93	8.0%	83.11
2017			0	0	0	0		1081.35	8.0%	86.51
2018			0	0	0	0		1125.54	8.0%	90.04
2019			0	0	0	0		1171.57	8.0%	93.73
2020			0	0	0	0		1219.52	8.0%	97.56
Total		900	115	100	50	635				1527.24

Inflation Rate	Inflation Reserve	Income Available	Year	Actual Overhead	Expenditure Projects	EOY Endowment Principal	EOY Cumulative Available
0.0%	0.00	0.24	1991	0.50	2.00	34.24	0.24
0.0%	0.00	3.19	1992	7.00	20.00	78.13	3.43
0.0%	0.00	8.06	1993	5.00	20.00	128.89	11.49
0.0%	0.00	11.32	1994	3.50	20.00	154.41	22.81
0.0%	0.00	13.36	1995	3.50	20.00	181.96	36.16
0.0%	0.00	15.56	1996	3.50	20.00	211.73	51.73
0.0%	0.00	18.80	1997	3.50	20.00	277.03	70.53
0.0%	0.00	24.03	1998	3.50	20.00	347.56	94.56
0.0%	0.00	29.67	1999	3.50	20.00	423.73	124.23
0.0%	0.00	35.77	2000	3.50	20.00	506.00	160.00
0.0%	0.00	42.35	2001	3.50	20.00	594.84	202.34
4.0%	23.79	23.79	2002	3.50	20.00	618.93	226.14
4.0%	24.76	24.76	2003	3.64	20.80	644.01	250.90
4.0%	25.76	25.76	2004	3.79	21.63	670.11	276.66
4.0%	26.80	26.80	2005	3.94	22.50	697.28	303.46
4.0%	27.89	27.89	2006	4.09	23.40	725.58	331.35
4.0%	29.02	29.02	2007	4.26	24.33	755.03	360.37
4.0%	30.20	30.20	2008	4.43	25.31	785.70	390.58
4.0%	31.43	31.43	2009	4.61	26.32	817.63	422.00
4.0%	32.71	32.71	2010	4.79	27.37	850.88	454.71
4.0%	34.04	34.04	2011	4.98	28.47	885.50	488.74
4.0%	35.42	35.42	2012	5.18	29.60	921.55	524.16
4.0%	36.86	36.86	2013	5.39	30.79	959.10	561.03
4.0%	38.36	38.36	2014	5.60	32.02	998.21	599.39
4.0%	39.93	39.93	2015	5.83	33.30	1038.93	639.32
4.0%	41.56	41.56	2016	6.06	34.63	1081.35	680.88
4.0%	43.25	43.25	2017	6.30	36.02	1125.54	724.13
4.0%	45.02	45.02	2018	6.56	37.46	1171.57	769.15
4.0%	46.86	46.86	2019	6.82	38.96	1219.52	816.01
4.0%	48.78	48.78	2020	7.09	40.52	1269.47	864.79
	662.45	864.79		137.35	755.42		

EOY Cumulative Spent	Net
2.50	-2.26
29.50	-26.07
54.50	-43.01
78.00	-55.19
101.50	-65.34
125.00	-73.27
148.50	-77.97
172.00	-77.44
195.50	-71.27
219.00	-59.00
242.50	-40.16
266.00	-39.86
290.44	-39.54
315.86	-39.20
342.29	-38.83
369.78	-38.43
398.37	-38.00
428.11	-37.53
459.03	-37.03
491.20	-36.49
524.64	-35.90
559.43	-35.27
595.61	-34.58
633.23	-33.84
672.36	-33.04
713.05	-32.18
755.38	-31.25
799.39	-30.24
845.17	-29.15
892.77	-27.98

11.1.1 IV
2/5-6/92

IDENTIFICATION OF HABITATS RELEVANT TO INJURED SPECIES

R 96

Justification

A number of species injured by the Exxon Valdez oil spill utilize streams, lakes, riparian habitat or upland habitat under both public and private ownership within the oil spill area. Bald eagles and marbled murrelets nest in mature forests. Salmon, Dolly Varden char and cutthroat trout spawn in coastal streams and rivers while harlequin ducks nest in adjacent riparian vegetation. River otters use mature forest zones for denning and travel corridors.

Some of the habitats important to these injured species could be eliminated by proposed logging or other development. Identifying, prioritizing, and monitoring habitats for these species is an important element of any acquisition program, habitat protection or other restoration activity aimed at these species.

Public pressure to begin an acquisitions program is very high. The Trustee Council directed the executive director to develop a systematic process for a lands/habitat acquisition and protection project. The March 1, 1991 Federal Register notice, 56 FR 8903 identified a five step process for identifying and protecting strategic fish and wildlife habitats and recreation sites. The first step, identification of key upland habitats that are linked to the recovery of injured resources or services by scientific data or other relevant information, is what this project attempts to fulfill.

The injured species habitat identification project will utilize remote sensing and field verification to identify and map habitats within the oil spill area. Specific objectives of the project are:

1. Provide a systematic process for mapping upland resources and evaluating habitat values for injured species.

2. Provide a tool for oil spill area wide comparisons of habitat values for parcels of land regardless of ownership (i.e. could display uniqueness of parcels).

3. Provides the basis for monitoring the effectiveness of restoration options directed toward these species including an acquisition option.

4. Provides the basis for development of management tools for public and private lands to enhance restoration.

5. Allows resource based evaluation or selection of lands considered for acquisition/review.

6. Provides injured species habitat information on critical areas within one year while providing a basis for evaluating all oil spill impacted lands within several years.

Evaluating injured species habitat is a multi-year project. While some areas under immediate threat could be evaluated in 1992, the cost and time required to evaluate all areas considered for acquisition is prohibitive. This project will allow the Trustee Agencies to predict the habitats being considered for acquisition or protection without the expense of having to visit every site. Future work could refine the maps to allow for extremely accurate calculations of resource values.

Budget

Coordination between the Alaska Department of Fish and Game, Forest Service and the US Geological Survey EROS field office are still going on. A detailed budget is not available yet. However a preliminary breakdown is as follows:

Remote Sensing Interpretation

Personnel	$60,000	1 FTE to process existing imagery
Supplies	$65,000	Satellite imagery and air photos
Equipment	0	
Contracts	0	
Travel	0	
Data interpretation integration and analysis	$200,000	
Subtotal	$365,000	

Field work to verify remote sensing work and determine if habitats are within critical areas:

Personnel	$130,000
Travel	$18,200
Contractual	$52,000
Supplies	$13,000
Equipment	$19,500
Sub Total	$232,700
Project Total	$600,000

Study Title: Recovery Monitoring of Hydrocarbon-Contaminated Subtidal Marine Resources

Study ID Number: Restoration Study Number 101

Lead Agencies: NOAA/ADFG/ADEC

Cost of Proposal: $1021 K

Study Dates: March 1, 1992 - February 28, 1993

Project Justification

Recovery rates of subtidal sediments contaminated by petroleum hydrocarbons at the latitude of PWS are poorly known. Complete recovery to background levels of hydrocarbons in subtidal sediments in the Sound is likely to take several years. This study proposes to document hydrocarbon contamination of subtidal sediments (part A), of populations of particular species of fish and invertebrates (part B), and monitor the recovery of shallow subtidal (part C) and deep-water benthic communities (part D). Monitoring subtidal microbiological recovery will also be conducted (part E). Birds and mammals that forage in or come into contact with subtidal sediments will be partially dependent on the recovery of these resources for their own recovery.

Project Statement Summary

Part A. Subtidal Sediments (NOAA). NRDA studies have documented the contamination of subtidal sediments in PWS by the EVOS. We have found that by June 1990 sediments were contaminated at no fewer than 15 study locations within PWS. Sediment contamination had reached a depth of 20 m at 8 or more sites. In or near two heavily contaminated bays, oil was detected in sediments to a depth of 100 m. Between 1989 and 1990, there has appeared to be a tendency for contamination to be spreading from shallow to deeper depths. This study will monitor the recovery of these sediments to baseline levels over time.

Part B. Subtidal Fish Species (NOAA). There has been extensive and continuing exposure of subtidal fish to oil in PWS following the EVOS. Data suggests that oil has spread to deeper areas with time. The rates and extent of natural recovery of demersal fish species needs to be determined. Samples of benthic fish has shown evidence of alterations in reproductive parameters, and some possible evidence of altered histopathology. This project proposes to document the rate and extent of recovery of subtidal fish species from oil exposure. Return to natural biological conditions and health will be documented.

Part C. Shallow Subtidal Benthos (ADFG). The significance of oil impact to shallow subtidal benthos lies in the effects on the food chain: normal food species fed on by fish, otters, etc, may no longer be present in adequate numbers, and hydrocarbon

contamination may be passed to higher trophic level organisms. It is within the shallow areas where such species as sea ducks, sea otters, and river otters forage. This project will continue to monitor the effects of oil and the recovery of the shallow bottom habitat communities in selected areas of PWS.

Part D. Deep Benthic Communities (ADFG). The significance of oil impact to deep benthic communities lies in the effects on the food chain: normal food species fed on by fish, otters, etc, may no longer be present in adequate numbers, and hydrocarbon contaminants may be passed to higher trophic levels. This project will continue to determine the effects of oil on deep benthic communities, and to monitor the progress of recovery. However, the deepest sites, where there was the least evidence of oil effects, will be omitted in 1992 to reduce costs.

Part E. Microbial Recovery (ADEC). Microbial numbers and activity in sediments are good indicators of exposure to hydrocarbon contamination. In addition, these measurements yield information on the mobilization of oil to deeper sediments over time. Microbial activity remained high in 1991 at some sites presumably where relatively fresh oil was still present. Microbial information promises to be useful in linking the other parts of this study together and possibly for prioritizing sediment hydrocarbon samples for analysis.

Budget

Budget for Oil Spill Year 4

ITEM	DETAIL	PROJECT COST	OY4/ FY92	OY4 FY93
SALARIES				
	Principal Investigator: GS-12; 0.25 FTE	19500		
	Research Fish. Biologist: GS-09; 1.0 FTE	42100		
	Research Fish. Biologist: GS-07; 0.21 FTE	6800		
TRAVEL				
	3RT JNU-VALD FIELD WORK $600	1800		
	2RT JNU-ANCH MEETING $500 + $196/D Per Diem, 3d	2064		
	1RT JNU-SEA MEETING $550 + $103/D Per Diem, 3d	859		
CONTRACTS				
	Vessel 14d x 5.0K/d	70000		
	Hydrocarbon analysis 180 samples x $788/sample	141840		
SUPPLIES				
	Bottles, solvents, dive supplies containers	5000		
TOTAL COSTS		289,963		
Percentages		100%		

Detailed Budget Restoration Study 75					
Salaries					
	Titles	Grades	FTE	Cost	
	Principal Investigator	GM-15	0.1	$7,858	
	Deputy Division Director	GM-14	0.1	$7,098	
	Supv. Res. Chemist	GS-12	0.2	$9,070	
	Zoologist	GS-11	0.2	$6,703	
	Res. Chemist	GM-13	0.2	$11,487	
	Res. Chemist	GS-11	0.2	$8,290	
	Physiologist	GS-11	0.2	$8,290	
	Fish. Biol. (Res.)	GS-11	0.2	$7,563	
	Computer Specialist	GS-7	0.31	$6,791	
	Chemist	GS-9	0.2	$5,360	
	Fishery Biologist	GS-13	0.2	$9,242	
	Fishery Biologist	GS-7	0.2	$4,381	
	Biochemist	GS-7	0.2	$4,381	
	Biotechnician	GS-7	0.2	$4,381	
	Histopathologist	GS-7	0.2	$4,381	
Leave Surcharge				$18,634	
Total Salaries					$123,909
Employee Benefits					$21,932
				total salaries	$145,841
Travel					
RT to Anchorage for sampling @ $750				$3,000	
(airfare $350/perdiem @ $133)					
3 RT to Anchorage for meetings @ $900				$2,700	
(airfare $350/perdiem @ $133)					
Total Travel					$5,700
Contracts					
vessel charter, 10 days @ 5K/day					$50,000
Supplies					
Office supplies				$2,500	
Field sampling supplies				$11,000	
chemicals, equipment maintenance and parts				$35,000	
					$48,500
PROJECT TOTAL					$250,041

Injury to Shallow Benthic Communities

PROJECT LEADER:
Steve Jewitt

PROJECT NO:
R101 - Part C - ADFG

LOCATION:
University of Alaska-Fairbanks

PHONE:
474-7841

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	0.0	0.0	0.0
72000	0.0	0.0	0.0
73000	0.0	0.0	0.0
74000	0.0	0.0	0.0
75000	0.0	0.0	0.0
TOTAL	0.0	0.0	$330,000

This is to be the department's OY4 budget request for the above project.

On the following pages, please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS:

Oil spills have three phases of impact to communities of bottom-dwelling organisms: Phase 1 characterized by a short-term toxic effect in which there is large-scale mortality; Phase 2 is characteriz by an invasion of opportunistic organisms that feed on the abundance of dead organic material that result from Phase 1; Phase 3 is recovery and return to normal. This project began in fall 1989, focussing on sit of less than 20m depth. The study sites were in biologically important areas where eelgrass (Zoste brown algae (Laminaria) predominate. There has been injury or death to the plants within eelgras affected by oil, a reduction in some shallow-bottom invertebrates, and an increase in scavenger specie Based on experience elsewhere, it can be expected that dead organic material will be consumed by bacter and opportunistic scavenger animals over a period of 3-5 years, during which time, normal communities c be expected to reestablish themselves. The significance of oil impact to shallow subtidal communities l in the effects on the food chain: normal food species fed on by fish, otters, etc. may no longer be prese in adequate numbers, and hydrocarbon contaminants may be passed to higher level organisms. It is with the shallow areas where species such as sea ducks, sea otters, and river otters forage. This project w continue to monitor the effects of oil and the recovery of the shallow bottom habitat communities selected areas of Prince William Sound. This study compliments the deep benthic study.

Injury to Deep Benthic Communities

PROJECT LEADER:
Howard Feder

PROJECT NO:
R101 Part D - ADFG

LOCATION:
University of Alaska-Fairbanks

PHONE:
474-7956

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	0.0	0.0	0.0
72000	0.0	0.0	0.0
73000	0.0	0.0	0.0
74000	0.0	0.0	0.0
75000	0.0	0.0	0.0
TOTAL	0.0	0.0	$115,000

This is to be the department's OY4 budget request for the above project.

On the following pages, please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS:

Oil spills have three phases of impact to communities of bottom-dwelling organisms: Phase 1 is characterized by a short-term toxic effect in which there is large-scale mortality; Phase 2 is characterized by an invasion of opportunistic organisms that feed on the abundance of dead organic material that resulted from Phase 1; Phase 3 is recovery and return to normal. Because this project did not begin until July 1990, more than a year after the oil spill, Phase 1 had be completed except in certain limited areas. There was, however, considerable evidence that Phase 2 was present in 1990 and continued into 1991. Based on experience elsewhere, it can be expected that dead organic material will be consumed by bacteria and opportunistic animals over a period of 3-5 years, during which time, normal communities can be expected to reestablish themselves. The significance of oil impact to deep subtidal communities lies in the effects on the food chain: normal food species fed on by fish, otters, etc. may no longer be present in adequate numbers, and hydrocarbon contaminants may be passed to higher level organisms. This project will continue to determine the effects of oil on deep benthic communities, and to monitor the progress of recovery. However, the deepest sites, where there was the least evidence of oil effects, will be omitted in 1992 to reduce costs. This project compliments the shallow benthic project.

PROPOSED BUDGET
Subtidal Study Number 101
(Microbiology)
1 March 1992 - 28 February 1993

	REQUESTED FUNDS
A. SALARIES/WAGES	
1. Principal Investigator	$ 7,000
2. Technician	$12,000
B. TRAVEL	$1,500
C. SERVICES	
Photocopying, Communications, Graphics	$ 300
D. SUPPLIES	$ 7,200
E. EQUIPMENT	0
F. TOTAL DIRECT COSTS	$30,000
** G. OVERHEAD 20% of Total Direct Costs	$6,000
TOTAL COSTS	$36,000

** Less amount reserved by the University of Alaska Fairbanks for claim through the CERCLA process (Comprehensive Environmental Response, Compensation and Liability Act of 1980) ($9,000)

COASTAL HABITAT NATURAL RECOVERY MONITORING
R102

Justification

The intertidal zone was the most severely contaminated habitat within the oil spill area. Recovery in the supratidal is progressing. However, recovery in the one and two meter drop of the intertidal zone is still retarded. Natural populations of intertidal organisms were significantly reduced along heavily oiled shorelines throughout the oil impact region. Densities of intertidal algae (Fucus), barnacles, limpets, amphipods, isopods, and marine worms were decreased. Although there were increased densities of mussels in oiled areas in 1990, they were significantly smaller than mussels in the unoiled areas and the total biomass of mussels was significantly lower. In 1991, mussel densities and biomass were both greater at control sites than oiled sites. Petroleum hydrocarbon accumulation in filter feeding mussels experimentally placed in oiled areas indicate that oil remains available for uptake by other organisms. In both 1990 and 1991, oiled surfaces retarded settlement by juvenile barnacles when compared to unoiled sites.

Fucus, the dominant intertidal plant, was severely affected by the oil and subsequent cleanup activities. In 1991, Fucus densities continued to be depressed at oiled sites, probably due to the poor dispersal capability of this alga. The percentage of intertidal areas covered by Fucus was reduced following the spill and opportunistic plant species which characteristically flourish in disturbed areas were increased. In 1991, most algal species showed adverse affects of the oil spill, with only one species being more abundant at oiled sites than control sites. The average size of Fucus was reduced, the number of reproductive sized plants greatly decreased, and the remaining plants of reproductive size decreased in reproductive potential due to fewer fertile receptacles per plant. There was also reduced recruitment of Fucus at oiled sites.

Many injured species utilize the intertidal zone including harlequin ducks, pigeon guillemots, black oystercatchers, sea otters and river otters. Monitoring the natural recovery of the intertidal zone is an important component of determining when recovery of these species and the overall ecosystem has returned to baseline conditions. Permanent stations set up in Prince William Sound will monitor the recovery of the dominant intertidal plant, Fucus, as well as barnacles, mussels, and other organisms important to the recovery of the ecosystem.

The coastal habitat monitoring project is a logical progression from the NRDA studies. Injury has been determined, now it is important to determine when recovery has occurred. The techniques and methodologies for studying the intertidal organisms are well established.

Restoration monitoring was initiated in 1991, prior to the completion of the NRDA studies. Failure to continue a monitoring program in 1992 will make it difficult to determine the rate and extent of natural recovery. Discontinuity may also result in the loss of trained personnel and permanent study sites resulting in increased costs and reduced reliability of the data in outyears.

Budget: Details of the budget will be worked out at a synthesis meeting scheduled for February 17 and 18, 1992. The proposed budget for monitoring the entire oil spill area intertidal area is $700,000.

Study Title: Recovery Monitoring of Intertidal Oiled Mussel Beds in Prince William Sound and the Gulf of Alaska Impacted by the Exxon Valdez Oil Spill

Study ID Number:	Restoration Number 103
Principal Investigator:	Stanley D. Rice Malin M. Babcock Patricia Rounds
Lead Agency:	NOAA/NMFS/Auke Bay Laboratory
Other Agencies:	ADEC, ADNR, ADF&G, USFWS, NPS
Cost of Proposal:	750 K
Study Dates:	March 1, 1992 - February 28, 1993

Project Summary

This project will survey the geographic extent of contaminated mussels beds by sampling mussels, byssal thread mats, and underlying or adjacent sediments; and analyzing for petroleum hydrocarbons. This project consists of extensive field sampling, determination of biological impact on mussels and hydrocarbon analyses. Preliminary identification of potential sites will be provided by ADEC.

We also propose to evaluate the recovery of mussels in oiled mussel beds with and without treatments.

Project Justification

High oiled concentrations in mussels and the underlying materials in oiled beds were found in 1991. This provided a possible link (cause) for continued reproductive failure of harlequin ducks in the western PWS, damage to oystercatchers, and higher than normal mortalities of juvenile otters. This study proposes to determine the geographical extent of oiled mussel beds, the intensity of oil remaining in mussels and the underlying organic mat. This study will provide data to assess the possible linkage of oiled mussel beds with continued damage to harlequin ducks, oystercatchers, and juvenile otters. The recovery of these oiled beds with some mechanical treatment and without treatment will be followed.

Budget 750 K

11.6.1 M

APPLIED MARINE SCIENCES, INC.

PO Box 824
2155 Los Positas Court, Suite V
LIVERMORE, CA 94550
Telephone No. (415) 373-7142
Facsimile No. (415) 373-7834

February 10, 1992

To: Trustee Council Members 907-465-3444
From: R. Spies 907 562-4376

Dear ,

See attached.

APPLIED MARINE SCIENCES, INC.
2155 Las Positas Court, Suite V
Livermore, CA 94550
Telephone No. (510) 373-7142
Facsimile No. (510) 373-7834

To: Trustee Council, *Exxon Valdez* Oil Spill
From: Robert Spies, Chief Scientist
Re: Recommendation for the 1992 Science Program

In response to your request for recommendations regarding the scientific and restoration studies proposed by the Restoration Team for 1992, I provide the following analysis. This represents what I could accomplish in three days and might be improved on further consideration.

In the following analysis I apply my knowledge of the resource injury from the spill, which was summarized in my presentation of February 6, to assess:

- Closeout of the damage assessment studies
- Continuation of some damage assessment studies
- Implementation of new restoration studies and activities

In order to make a useful scientific assessment, it was necessary to devise criteria to guide my analysis, and I present these criteria below. This type of assessment could be conducted with other criteria the Trustees might consider appropriate.

Damage Assessment Closeout or Continuation

The criteria for assessing the closeout of the damage assessment studies take the form of seven options as follows:

1. Finish all Damage Assessment Studies
2 Finish only those studies demonstrating potential or real Injury
3. Finish only those studies demonstrating significant injury (from sublethal through chronic population effects)
4. Finish only those studies demonstrating adult mortality
5. Finish only those studies demonstrating significant population decline
6. Finish only those studies demonstrating chronic population declines
7. Finish only those studies needed for restoration actions besides monitoring.

In Table 1 the impact of these options on the makeup and budget for damage assessment closeout is shown. Adoption of the various options can result in a range of programs from very modest to extensive. Table 2 applies these seven options to the damage assessment studies proposed for continuation.

If the adoption of one of these options is not satisfactory, I would have two recommendations for further refining the damage assessment budget. First, conduct a detailed audit of the proposed costs associated with each of these programs, with the goal of eliminating any unnecessary or duplicative expenditures. Second, conduct a specific examination of the largest program, the comprehensive Coastal Habitat Program, to identify cost savings that may be implemented without losing information on potentially important injuries. I could, with the help of one or more of the peer reviewers, undertake the latter evaluation.

Restoration Proposals

Conducting the assessment of restoration proposals required developing criteria for review of each proposal in a consistent manner. These criteria take the form of the decision framework presented in Figure 1. While this framework may look rather complex, it allowed me to apply my scientific judgement in a systematic manner to arrive at one of four outcomes:

- Defer the proposal
- Conduct a further study of damage assessment
- Do occasional monitoring
- Implement a restoration feasibility study or action

This framework does not properly assess proposals for enhancement or habitat acquisition where there was no evidence for injury, such as proposals for stream improvement on Montague Island for chum salmon. Although there is no evidence for injury of chum salmon, the trustees may wish to consider a proposal for enhancement of resources in the area. This would require adopting additional criteria for considering restoration proposals beyond evidence of oil spill injury. I feel that I am not prepared with only short notice to make any recommendations using such criteria, especially when there are engineering considerations.

Table 3 presents the results of applying the my professional scientific judgement to the restoration proposals using the framework presented in Figure 1. The cost of implementing the Recovery Monitoring, Technical Support, and Restoration Planning proposals is $ 6.45 million, inclusive of the archeological work and the public information requests, which I have not reviewed. (The total cost of the proposals that are deferred is $ 2.02 million.) The total cost of implementing the studies of populations requiring "occasional monitoring", $4.07 million, could be could be reduced, particularly if the Trustees decide that minimizing monitoring expenditures is an appropriate goal (In light of the large commitment of resources needed to finish damage assessment, it may be worthwhile for the council to consider an extreme minimum of recovery monitoring in 1992). With a directive from the Council I could provide, by further

consultation with the peer reviewers and investigators, recommendations for occasional monitoring for each population.

When I review proposals for scientific study in various branches of the government concerned with the effects of marine contamination , I am usually expected to comment on two things that have been minimized in directions to the peer reviewers. These are (1) the timely completion of the objectives of the study within the requested budget, and (2) an assessment of the ability of the investigators to carry out the studies. Most of the damage assessment studies proposed for closeout are essentially studies that were not completed timely and within budget. This does raise questions as to whether the restoration projects proposed for 1992 will be finished with the resources requested.

I would be pleased to formulate recommendations for the 1992 science program using any other criteria the Trustee Council decides is appropriate, including prioritizing the program to meet a fixed budget. I would feel quite uncomfortable, however, providing recommendations regarding appropriate decision criteria. I believe that in my role as Chief Scientist I will be most effective if I my activities are limited strictly to assessing the scientific implications of Trustee policy.

Figure 1: Damag ssessment/Restoration l lsion Framework

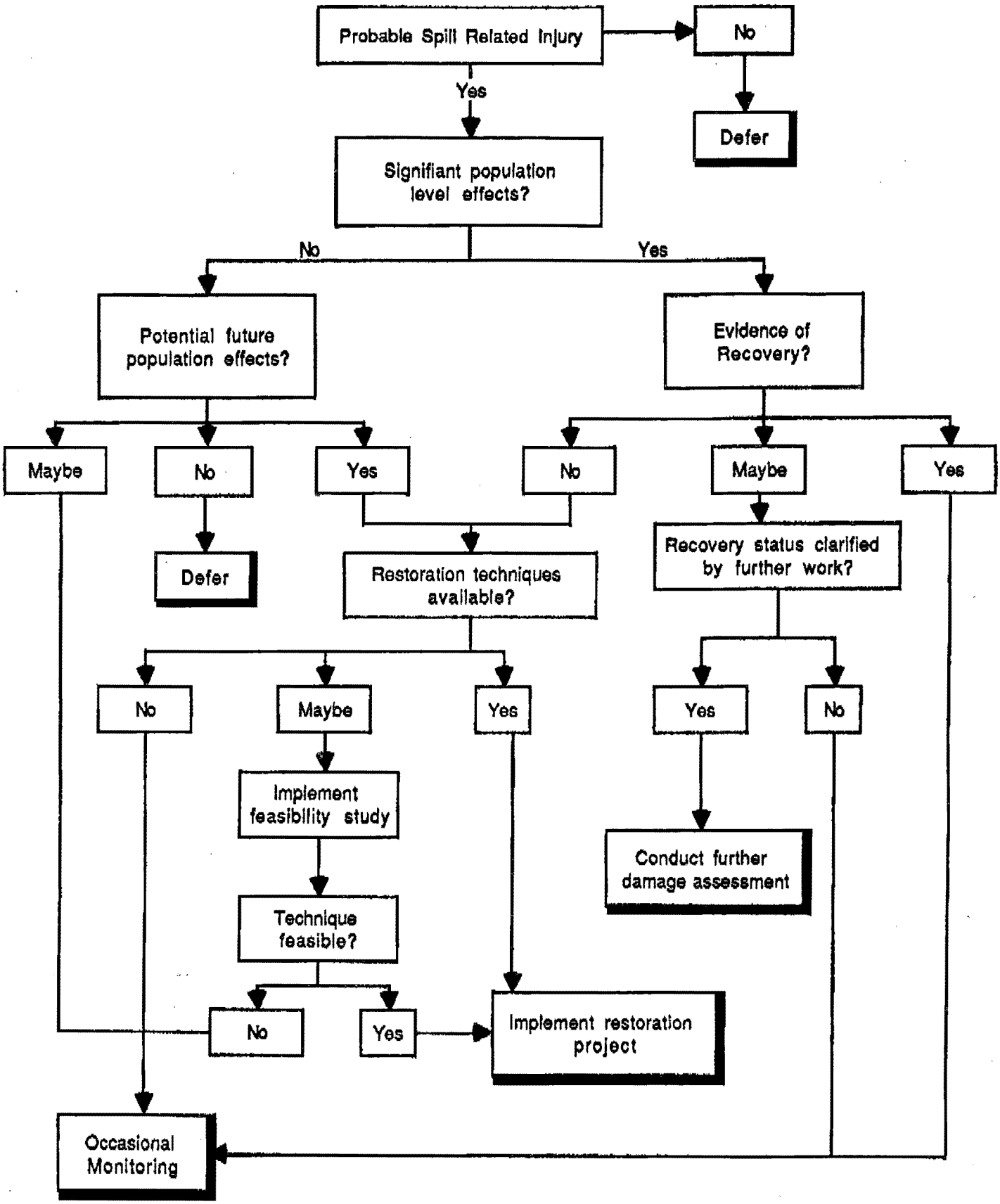

TABLE 1: DAMAGE ASSESSMENT CLOSEOUT OPTIONS

No.	Short Title	Request	Service/area of injury (1-7)		OPTIONS						
					1	2	3	4	5	6	7
AW1	Surface oil maps	$15,000	fate	†	X	X	X	X	X	X	
ST1A	Injury to subtidal sediments	$100,300	5		X	X	X	X	X		
ST1B	Hydrocarbon mineralization	$16,000	fate	†	X	X	X				
ST2A	Shallow benthic communities	$125,000	5		X	X	X	X	X		
ST2B	Deep Water Benthos	$80,000	2		X	X					
ST3A	Bioavail. & Transport of hydrocarbons	$29,300	fate	†	X	X	X	X			
ST3B	Bioavail. & Transport of hydrocarbons	$46,700	fate	†	X	X	X	X			
ST6	Injury to rockfish	$15,000	3 or 4		X	X	X	X			
ST7	Injury to demersal fish	$66,100	2 - fate	†	X	X					
CH1A	Coastal habitat study	$2,850,000	5		X	X	X	X	X	X	
CH1B	Pre- & post-spill HC in mussels	$40,000	fate	†	X	X	X				
MM1	Injury to humpback whales	$15,000	none		X						
MM2	Injury to killer whales	$35,000	uncertain		X	X	X	X			
MM6	Injury to sea otters	$200,000	6		X	X	X	X	X	X	
Arch 1	Archeology survey	$226,850	no comment		X	X	X	X	X	X	
FS1	Salmon spawning area injury	$65,600	3		X	X	X				
FS2	Egg/pre-emergent fry sampling	$36,700	3		X	X	X				
FS3	Coded wire tag and analysis	$118,600	2		X	X	X				
FS4A	Early marine salmon injury	$136,400	4		X	X	X	X			
FS4B	Effects of oil on juvenile salmon	$120,000	4		X	X	X	X			
FS5	Injury to Dolly Varden/Cutthroat	$18,000	4		X	X	X	X	X		
FS11	Herring injury	$267,000	3		X	X	X				
FS13	Clam injury	$93,100	uncertain		X	X					
B2	Boat surveys for birds/otters	$60,000	6		X	X	X	X	X	X	
B3	Seabird colonies	$125,000	6		X	X	X	X	X	X	
B4	Bald eagles	$75,000	4		X	X	X	X			
B6	Marbled murrelets	$18,000	7		X	X	X	X	X	X	X
B7	Forked tail storm petrels	$5,000	4		X	X	X	X			
B8	Black-legged kittiwakes	$5,000	uncertain		X	X					
B9	Pidgeon guillemots	$18,000	4		X	X	X	X	X		
B11	Sea ducks	$20,000	4		X	X	X	X			X
B12	Shorebirds	$18,000	4		X	X	X	X			

Cost projections based on options 1-7

Option		Cost
1	All studies	$5,179,650
2	All with injury	$5,164,650
3	significant injury	$4,920,450
4	adult loss	$4,356,550
5	significant populati	$3,856,150
6	chronic population	$3,576,850
7	Link to upland habi	$38,000

†Studies that document the persistence of oil in the ecosystem that are needed to support injury studies

DRAFT

TABLE 2: DAMAGE ASSESSMENT CONTINUATION OPTIONS

No.	Short Title	Agency	Request	OPTIONS						
				1	2	3	4	5	6	7
TS1	Hydrocarbon Analyses	NOAA/USFWS	$950,000	X	X	X	X	X	X	
TS3	GIS Mapping	ADNR/USFWS	$400,000	X	X	X	X	X	X	
ST4	Fate & Toxicity of EVOS Oil	NOAA	$160,000	X	X	X				
ST5	Injury to Shrimp	ADF&G	$80,600	X	X					
ST8	Mussel Tissue and Sediment H	NOAA	$175,000	X	X	X	X	X	X	
TM3	Assessment of Effects of EVOS	ADF&G	$184,000	X	X	X				X
FS27	Sockeye Salmon Overescapeme	ADF&G	$524,800	X	X	X				
FS28	Run Reconstruction	ADF&G	$474,600	X	X	X				
FS30	Database Management	ADF&G	$178,700	X	X	X				
		Total	$3,127,700							

Cost projections based on options 1-7

Option		Cost
1	All studies	$3,127,700
2	All with injury	$3,127,700
3	significant injury	$3,047,100
4	adult loss	$1,525,000
5	significant population loss	$1,525,000
6	chronic population declines	$1,525,000
7	Link to upland habitat	$184,000

DRAFT

TABLE 3: RESTORATION PROGRAM CLASSIFICATION

No.	Cost	Amount	Level of injury	Disqualify	More Damage A	Occasional I	Restoration Project	
Recovery Monitoring								
B5	Brown Bear monitoring	$60,000	Very Uncertain	X				
R6	Sea Otter restoration monitorin	$687,000	chronic population			X		
R11	Murre restoration monitoring	$571,000	chronic population			X		
R13	Boat surveys of otters/birds	$250,000	chronic population			X		
R17	Black oystercatcher restoration	$59,000	reproductive	X				
R60C	Pink salmon egg/fry	$199,200	chronic sublethal		X			
R82	Killer whale monitoring	$177,900	Very Uncertain	X				
R90	Anadramous sportfish status and evaluation	$264,600	chronic loss of individuals				X	
R95	River otter restoration	$139,000	growth, sublethal	X				
R101	Subtidal recovery		population alteration (1 y)			X		
R102	Coastal habitat	$700,000	population alteration (1 y)			X		
R103	Oiled Mussel Beds	$750,000	chronic population ?				X	
Technical support								
R92	GIS mapping & analysis	$300,000	NA					
Restoration planning								
R20	Bald eagle restoration	$225,000		X				
R52	Rockfish restoration plan	$232,500	Loss of a few individuals	X				†
R53	Kenai River sockeye salmon	$634,400	Loss of smolts, pot pop effect				X	†
R58	Herring restoration/monitoring	$552,200	chronic sublethal	X				
R59	Genetic stock structure of salmo	$290,000	Loss of smolts, pot pop ef	X				†
R60AB	Pink salmon stock ID	$1,654,100	chronic sublethal			X		†
R73	Harbor seal	$210,300	population recoverying			X		
R104	Archeology	$345,000	NA				X	
R106	Dolly varden/CT tech support	$287,206	survival, growth loss of individuals	X				†
R118	Public info	$180,000					X	

Cost Summary	
Disqualify	$2,022,806
More Damage Assessment	$199,200
Monitor	$4,072,400
Restoration Implementation	$2,174,000
TOTAL	$8,468,406
TOTAL QUALIFYING	$6,445,600

†The Trustees may decide that other criteria should be used to decide how to proceed with these restoration proposals.

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11.1.1 L

PUBLIC RESOURCE CENTER

NO LIBRARY	**OPTION 1 & 2**	$226
	* No EVOS library * Another library picks up present OSPIC functions	
LIBRARY	**OPTION 3a**	$382
	* Scaled back library with no network (EVOS material only) * Move non-EVOS materials * Walk-in access only * No research capability * Staffing - 1	
	OPTION 3b	$229
	* Scaled back library on network (Evos material only) * Access statewide/west coast * No research capability * Staffing - 2	
	OPTION 4 (OSPIC as is)	$397
	* Collection includes EVOS, petroleum related, and oil spills in a marine environment (ie. Amoco Cadiz docs) * Acquisitions budget to support collection * Network access * Research available * Staffing - 5	

11.1.1K

ENVIRONMENTAL COMPLIANCE PLAN

The following is a schema that provides for maximum environmental assessment and co-ordination as well as project implementation. Although the terminology of NEPA has been utilized, the timeframe adopted should allow with full compliance with the state environmental policy act. This schema also dovetails with the timeline being developed by the RT. and Coastal Zone Management certification -

It is essential to this proposal that the Trustee Council recognize that we are involved in a single project, the Exxon Valdez Oil Spill Impact Restoration, which will have a life of greater than ten years. NEPA compliance will then apply to the life of the project.

1. For work year 1992 the proposals will be assessed as separate individual (independent) projects.

2. The Restoration Framework Document scheduled for public release in mid-March shall become the Restoration Framework Scoping Document setting the parameters for public scoping for the Restoration Plan scheduled to address the entire project. (The 1992 Work Proposal Document will be made publicly available at the same time.)

3. The public hearings to be scheduled on the Framework Scoping Document shall be noticed and conducted as NEPA scoping hearings. These hearings can occur as previously suggested in the March-April period.

4. The Draft EIS on the Draft Restoration Plan would be released in mid-September on the date currently proposed for release of the Draft Restoration plan. (EIS would include consideration of effects of 1992 work.)

5. There would be a 45 day period for public comment, review and public hearings on the Draft Plan and EIS. (November 1, 1992)

6. There would be a 30 day period for response to public comment. (December 1, 1992)

7. December 1, 1992 the EIS would be filed.

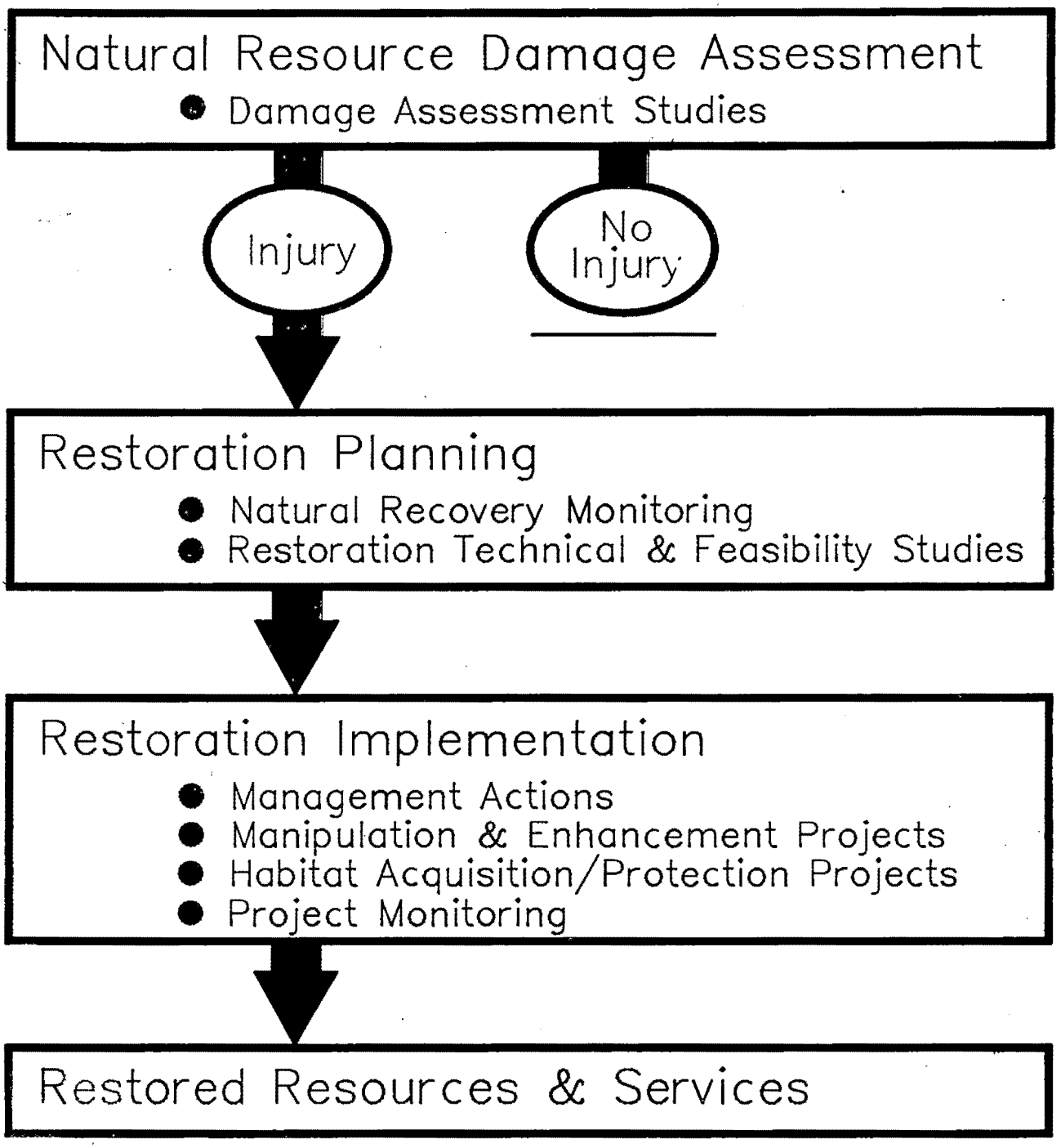
8. EIS would become final on December 31, 1992.

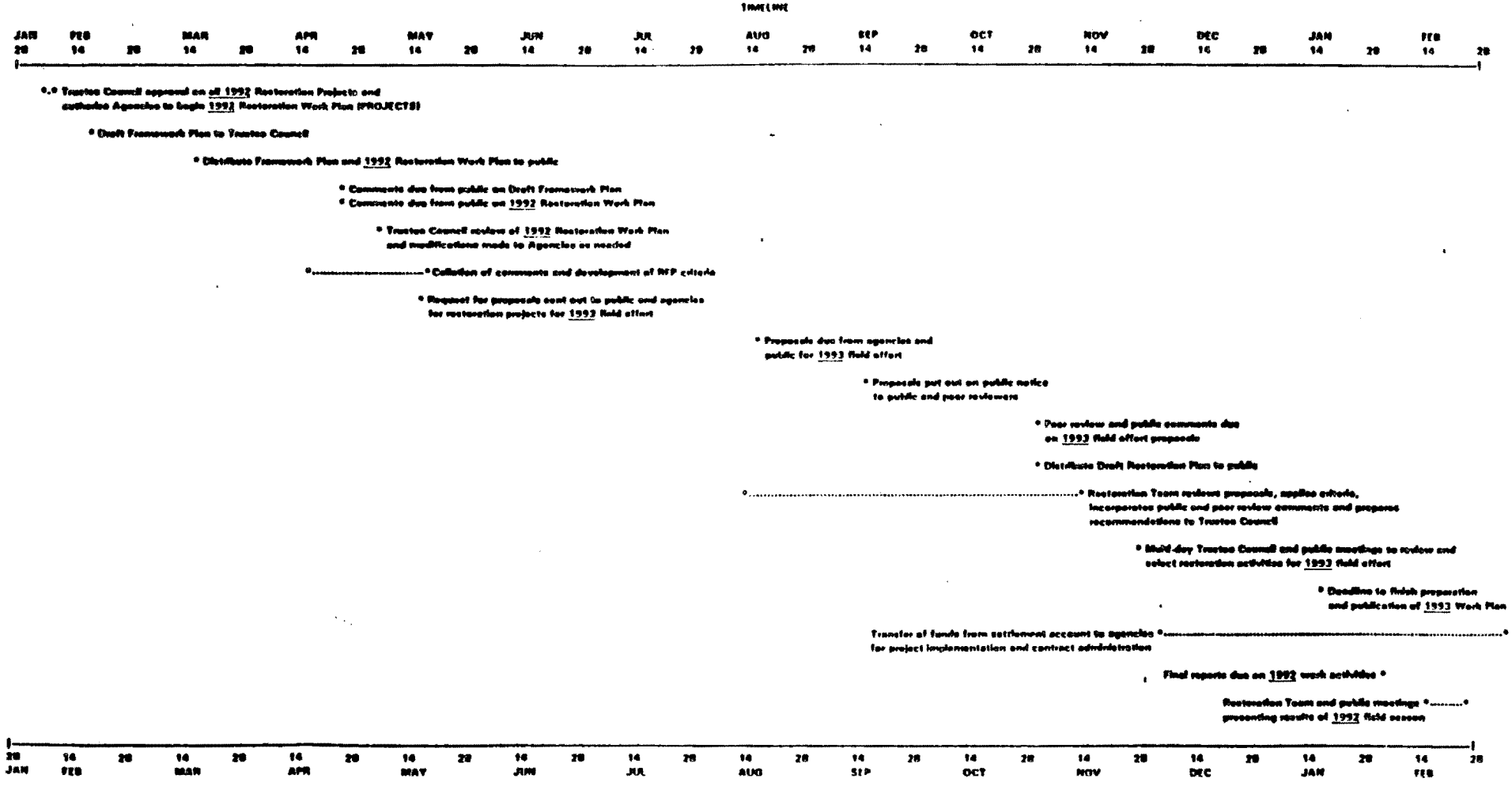
9. January 1993 the final Restoration Plan would be adopted as proposed in RT timeline.

NOTE: This does not solve the problem of 1993 proposals being out of synch.

11.1.15

Path to Restoration
Following the Exxon Valdez Oil Spill




TIMELINE
JAN 28
FEB 14 28
MAR 14 28
APR 14 28
MAY 14 28
JUN 14 28
JUL 14 29
AUG 14 28
SEP 14 28
OCT 14 28
NOV 14 28
DEC 14 28
JAN 14 28
FEB 14 28
Trustee Council approval on all 1992 Restoration Projects and authorize Agencies to begin 1992 Restoration Work Plan (PROJECTS)
Draft Framework Plan to Trustee Council
Distribute Framework Plan and 1992 Restoration Work Plan to public
Comments due from public on Draft Framework Plan
Comments due from public on 1992 Restoration Work Plan
Trustee Council review of 1992 Restoration Work Plan and modifications made to Agencies as needed
Collation of comments and development of RFP criteria
Request for proposals sent out to public and agencies for restoration projects for 1993 field effort
Proposals due from agencies and public for 1993 field effort
Proposals put out on public notice to public and peer reviewers
Peer review and public comments due on 1993 field effort proposals
Distribute Draft Restoration Plan to public
Restoration Team reviews proposals, applies criteria, incorporates public and peer review comments and prepares recommendations to Trustee Council
Multi-day Trustee Council and public meetings to review and select restoration activities for 1993 field effort
Deadline to finish preparation and publication of 1993 Work Plan
Transfer of funds from settlement account to agencies for project implementation and contract administration
Final reports due on 1992 work activities
Restoration Team and public meetings presenting results of 1992 field season
28 JAN
14 FEB
28
14 MAR
28
14 APR
28
14 MAY
28
14 JUN
28
14 JUL
28
14 AUG
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14 SEP
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14 OCT
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14 NOV
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14 DEC
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14 JAN
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14 FEB
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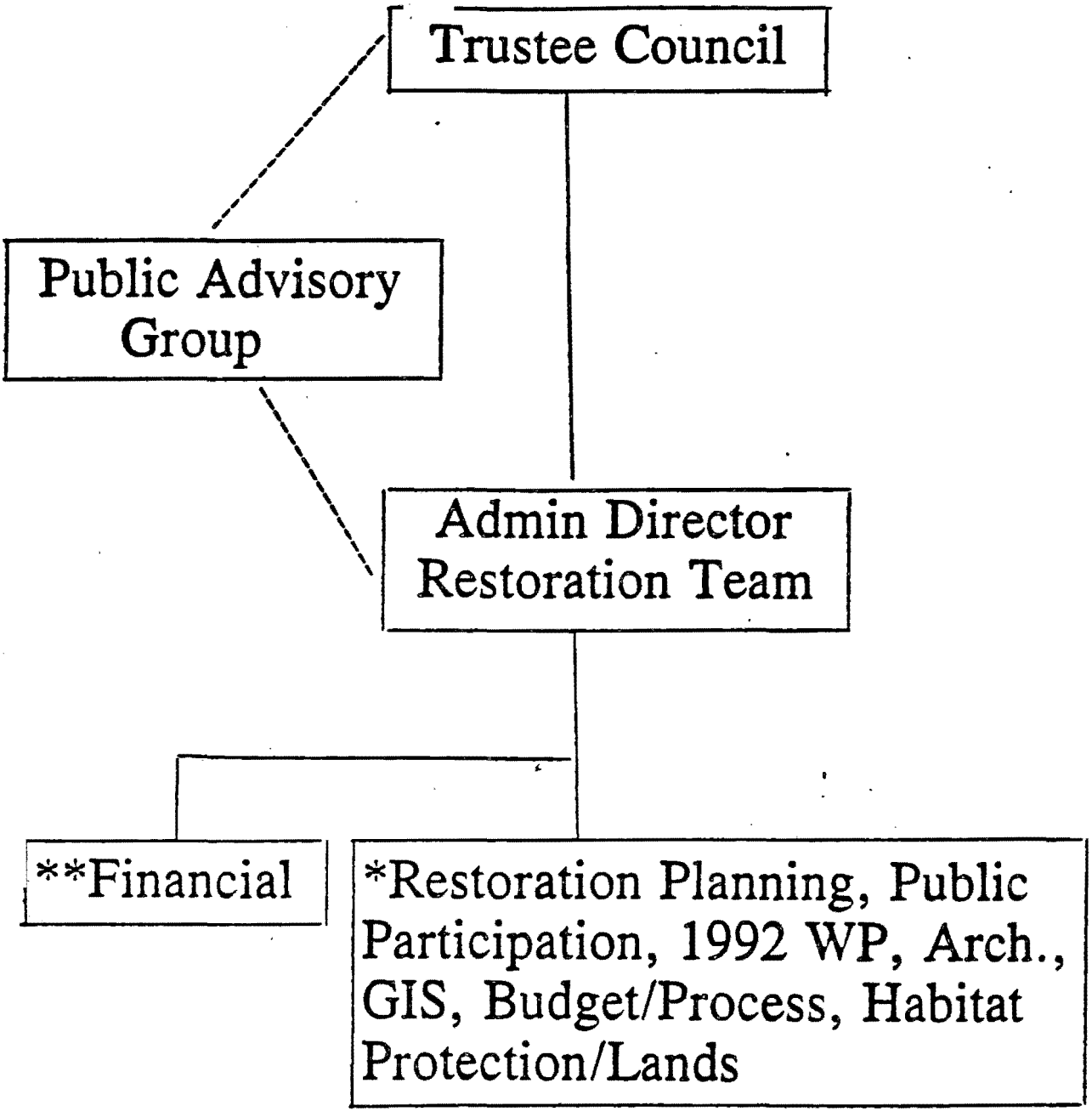
11.1.1 H



* Groups will be formed and disband as appropriate

**Does not include audit function. RT will develop a proposal for combined state/federal audit

EXXON VALDEZ POST SETTLEMENT 1-31-92
PROPOSED ORGANIZATIONAL BUDGET
MARCH 1, 1992 - FEBRUARY 28, 1993

TRUSTEE COUNCIL

Six Members

o	Salaries (1.5 days X 12 meetings = $7 K approx. salary X 6 Trustees)	$42K
o	Per-diem, including vehicle rental, cab fees ($200 X 12 meetings 1st year X 6 members)	14.4
o	Travel ($500 X 12 meetings 1st year X 6 members)	36
	Subtotal	$92.4K

PUBLIC ADVISORY GROUP

Ten Members

o	PAG Coordinator/Liaison	$75K
o	Reproduction, postage, phone etc. ($2K X 10 members + $10 general expenses)	30
o	Per-diem, includes vehicle rental or cab expense ($200 X 11 members and staff X 10 meetings 1st year)	22
o	Travel (members plus staff = 11 X $500 X 10 meetings 1st year)	55
o	Community Meeting Costs - Teleconference, room rental, recording, etc. (10 meetings X 4.5K) This budget assumes that PAG meetings can be held on the first floor of the Simpson Building at least 50% of the time.	45
	Subtotal	$227K

OFFICE OF THE ADMINISTRATIVE DIRECTOR

Fourth Floor Staff and Support

o Administrative Director	$95K
o Budget Analyst (CACI price $47K)	55
o Clerical & Administrative support for RT and RFSG (3 positions)(CACI price $150K)	120
o Per-diem, Administrative Director, ($200 per day X 5 days/mo X 9 mo + Interim Director's estimated travel through May)	16.2
o Travel, Administrative Director, ($500 X 3 trips/mo X 9 mo + Interim Director's estimated travel through May)	16.2
o Trustee Council Public Meeting Costs - Teleconference - $3.2/meeting, Transcripts - $1.5/meeting, Public Notice - $1.5/meeting, Room - $0.5, etc. ($7K X 12 meetings). TC meeting costs would be reduced by $6 K if the first floor of the Simpson Building were used for future public meetings.	84
o Other Staff travel	15
o Administrative Director Relocation Costs	30
o Document Printing and Distribution Cost - 1992 Workplan, Draft Restoration Framework, Draft Restoration Plan, 1993 Workplan and Response to Public Comments 1991 Workplan.	150
o Space (4th floor of the Simpson Building only), utilities, phones, security, equipment rental and maintenance agreements, supplies, courier and postage, and other costs (This figure is based upon historic costs and space needs and could change significantly depending upon where business is to be conducted)	195
Subtotal	$776.4K

Scientific Support

o Senior Scientist includes: Senior Scientist, Junior Scientist, supplies, travel and per-diem and overhead.	$191K
o Peer Reviewers - This number is a placeholder, the assigned peer review tasks will be reviewed in detail by the Restoration Team after approval of a 1992 workplan. See attached detailed explanation from Chief Scientist.	500
Subtotal	$691K

Public Outreach

o Public Resource Coordinators (2 positions) (CACI price $176K)	130
o Information Specialist (1.5 positions) (CACI price $88.5K)	97.5
o Public Resource Center - Space (First floor of the Simpson Building only), utilities, phones, security, equipment rental and maintenance agreements, supplies, courier, postage, and other costs (These projected costs and space needs could change significantly depending upon how and where business is to be conducted)	172.3
o Travel for Public Meetings (10 communities 3 times/yr X $25K each round)	75
Subtotal (Less PAG)	$474.8K

Total Administrative Director Budget $1,942.2K

RESTORATION TEAM (RT)

Six Members

o Six full-time FTE (Actual salaries)	$488.2K	
o Travel and Per-diem	135.4	
Subtotal		$623.6K

RESTORATION PLANNING SUBGROUP

o Six full-time FTE (Actual salaries)	$454.3K	
o Salaries, 4.25 FTE's for technical support, natural resource specialists, computer/graphics and economics.	300	
o Contractual services for development of the Restoration Plan	135	
o Travel and per-diem	60	
Subtotal		$949.3K

TOTAL ORGANIZATIONAL BUDGET	$3,834.5K

AGENCY PROGRAM SUPPORT

Personal Services, Professional	$1,426.0
Personal Services, Technical	834.7
Travel	327.0
Contractual Services	461.2
Commodities	105.3
Equipment	113.1
Total Agency Support Budget	$3,267.3K

1992 WORKPLAN

Damage Assessment:		
Continuation	$3,127,700	
Closeout	5,179,650	
Subtotal		$8,307,350
Restoration:		
Recovery Monitoring	$4,842,700	
Technical Support	300,000	
Restoration Implementation	9,567,116	
Subtotal		14,709,816
Total 1992 Workplan		$23,017,116

BUDGET SUMMARY

ORGANIZATIONAL BUDGET	$3,834,500	
AGENCY PROGRAM SUPPORT	3,267,300	
WORKPLAN	23,017,116	
TOTAL 1992 (MAR 1, 1992 - FEB 28, 1993) BUDGET		$30,118,916

JANUARY 31, 1992

EVOS RECOVERY
AGENCY PROGRAM SUPPORT

	** ADEC	** ADF&G	** ADNR	USDA	* USDI	NOAA	TOTAL
Personal Services	116.5	458.5	125.0	104.0	350.9	271.1	$1,426.0
Personal Services	41.0	525.2	90.0	42.5	86.6	49.4	834.7
Travel	32.0	57.4	11.1	90.0	45.0	91.5	327.0
Contractual Services	120.6	228.0	52.5	9.0	39.1	12.0	461.2
Commodities	34.0	46.0	14.0	1.8	4.5	5.0	105.3
Equipment	27.0	31.6	16.0	10.5	8.0	20.0	113.1
Total	371.1	1,346.7	308.6	257.8	534.1	449.0	$3,267.3

* USDI's budget does not include a budget for the Anchorage Office of the Secretary or the Office of Environmental Affairs.

** Includes project specific costs that are reflected in project costs for some agencies.

SIMPSON BUILDING 1/31/92
FACILITIES COST DETAIL

Space and Utilities Comparables:

- o Simpson Building (including CACI Multiplier) $1.11/sq.ft.
- o Federal Building 1.93/sq. ft.
- o ADEC Response Center 1.24/sq. ft.
- o Frontier Building 3.00/sq. ft.

Simpson Building Detail:

Space and Utilities:

4th Floor 5708 sq ft X $1.11 = $6336 X 12
1st Floor, Library side 2652 sq ft X $1.11 = 2944 X 12
1st Floor, Display and office side 2638 sq ft X $.86 (Mar 1 - July 1) = 2269 X 4
1st Floor, Display and office side 2638 sq ft X $1.11 (July 1 rent goes to $1.11/sq ft) = 2928 X 8

NOTE: This budget does not reflect the added cost of moving the operation, acquiring a phone system, computers, furniture and other costs which would be associated with a decision to relocate the existing and anticipated centralized government operation from the Simpson Building.

PROJECTED COSTS
(Mar 1,1992 - Feb 28, 1993)

	RESOURCE CENTER	FOURTH FLOOR
Space: Resource Center, Library side 1st Floor	$35,328	
Resource Center, Display side 1st Floor	32,500	
Fourth Floor		$76,032
Phones	21,000	45,000
Equipment		
Ektaprint 90 copier (2 each)	8,488	8,488
Kodak 235AF copier	19,140	19,140
Copier supplies	2,237	2,237
Maintenance Phone System	775	775
Alarm Maintenance and Monitoring	2,340	2,340
Cannon FAX Machine Maintenance	98	98
Teleconference and public address equip.		6,000
Equipment Subtotal	$33,078	$39,078
Supplies	17,009	17,009
Courier and Postage	6,480	2,397
Western Library Network	8,000	-
Acquisitions	5,000	
Subtotal (Mar 1, 1992 - Feb 28, 1993)	$158,395	$179,516
Other Costs (5%)	7,920	8,976
CACI Overhead (6%)(everything but space)	5,909	6,209
Totals	$172,224	$194,101

Public Resource Center

The Oil Spill Public Information Center (OSPIC) was established in 1990 at the request of the Washington Policy Group. Four options are being presented with the Restoration Team recommending Option 3b.

Inherent in each option is that there will be a Public Outreach staff comprised of 1.5 FTE ($98K) Public Information Specialists under the Administrative Director; the budget is reflected as part of the Public Outreach Section of the Office of the Administrative Director Budget. Should OSPIC be completely eliminated, these positions and the responsibilities outlined below must be continued as an essential part of the public outreach program. The duties of the Public Information Specialists include the following:

- Receive and direct to the appropriate person or agency request, questions, comments and suggestions.
- Provide reference and referral services for Administrative record materials.
- Code and track replies to specific requests for public comment.
- Mail Trustee Council agendas to appropriate parties.
- Write and issue press releases.
- Answer or direct inquirers from news media.
- Coordinate printing and distribution of relevant restoration documents.
- Maintain the official public record as it continues to develop.
- Provide copies of documents or other materials to members of the public.

OPTIONS

Option 1	Cost
- Published EVOS and non-EVOS data in OSPIC transferred to established library.	$226.3K
- Federal unpublished reports, incomplete or unanalyzed data stays in Federal agencies in Juneau and Anchorage.	No Cost
- State unpublished reports, incomplete or unanalyzed data stays in State agencies in Juneau and Anchorage.	No Cost

Consequences

- No Centralized EVOS collection.
- No active acquisitions.
- Some duplication of EVOS materials or records by Federal/State agencies.
- Public requests referred to agencies and libraries.
- No data search assistance at agency.
- Only on-site access to data in agency.
- Complete and incomplete databases may deteriorate at agencies.
- Data not readily accessible or usable by public.

Public Resource Center Staff Requirements:

Public Information Specialists (1.5 FTE)	*
Additional Staff (0 FTE)	No Cost
TOTAL COST:	$226.3K

* Budget for this item reflected as part of Administrative Director's Office.

Option 2	Cost
- Published EVOS and non-EVOS data in OSPIC transferred to established library.	$226.3K
- Federal unpublished reports, incomplete or unanalyzed data to Federal archive in Anchorage. (possible to have State and Federal combined in Federal archive)	No Cost
- State unpublished reports, incomplete or unanalyzed date to State. (possible to have State and Federal combined in State archive)	No Cost
- Archive in Juneau or UAF.	No Cost

Consequences

- No centralized EVOS collection.
- No active acquisitions.
- Some duplication of EVOS materials or records by Federal/State agencies.
- Public requests referred to agencies and libraries.
- No data search assistance at archive.
- Only <u>on-site</u> access to data in archive.
- Active materials will not be accepted in archives only complete data sets.
- Data not readily accessible or usable by public.
- May be cost to catalog materials before it is accepted by archives.

Public Resource Center Staff Requirements:

Public Information Specialists (1.5 FTE)	*
Additional Staff (0 FTE)	No Cost
TOTAL COST:	**$226.3K**

* Budget for this item reflected as part of Administrative Director's Office.

Option 3a:	Cost
- Centralize Public Resource Center Function under Administrative Director with the following responsibilities:	
o Acquisition and maintenance of published material on EVOS.	$ 5.0K
o Provide public access, reference, document distribution.	No Cost
o Response, agency files, non-published data to State or Federal archive when final; will not be housed in EVOS Resource Collection.	No Cost
o Move non-EVOS material to established library.	$226.3K*
o Receive and direct to the appropriate person or agency request, questions, comments and suggestions.	No Cost

- Consequences
  - No library network; there would be extremely limited offsite access of EVOS information.
  - No complete EVOS collection (no data, unpublished information, etc.)
  - Limited public access to EVOS reports.
  - Centralized EVOS collection will be available to public.
  - No research support available to public.

Public Resource Center Staff Requirements:

Public Information Specialists (1.5 FTE)	**
Additional Staff (1 FTE)	$ 65.0K

TOTAL COST:	$296.3K

* This amount needs to be adjusted because only non-EVOS material will be transferred. No budget information available from BLM at this time.

** Budget for this item reflected as part of Administrative Director's Office.

Option 3b:	Cost
- Centralize OSPIC function under Administrative Director:	
o Acquisition and maintenance of published material on EVOS.	$ 5.0K
o Provide public access, reference document distribution.	No Cost
o Response, agency files, non-published data to State or Federal archive when final; will not be housed in EVOS Resource Collection.	No Cost
o Networked at reduced level to provide nationwide access to EVOS information (includes interlibrary loan, cataloging, processing, etc.)	$ 8.0K

Consequences

- Complete EVOS collection.
- No research support.
- Public outreach/support provided.

Public Resource Center Staff Requirements:

Public Information Specialists (1.5 FTE)	*
Additional Staff (2 FTE's) 2 @ $65K ea. = $130K	$130.0K

TOTAL COST:	$143.0K

* Budget for this item reflected as part of Administrative Director's Office.

Option 4 (EXISTING OSPIC) **Cost**

- Maintain a unique first class specialty library with relevant EVOS and other baseline oil spill reference material.
- Continue an aggressive public outreach program.
- Provide the potential to make EVOS information available to the public once such an action is authorized.
- Continue staffing levels capable of providing support to other components of the EVOS operation, such as litigation preparation and FOIA processing.

COSTS:

Data Processing Manager	$ 22K
Executive Officer	$ 20K
Library Director	$ 78K
Reference Librarian	$ 63K
Library Assistant	$ 53K
Library Assistant	$ 53K
Catalog Librarian	$ 63K

TOTAL COST: **$352K**

Productivity and Survival of Brown Bears (R5)

A 1989 damage assessment study determined that 15% of 27 bears, captured and radio collared on the coast of Katmai National Park, probably ingested oil as a result of the Exxon Valdez oil spill. Extrapolation from population density estimates suggests that about 300 bears were possibly contaminated in this way. Two reproductive-aged females, known to have ingested oil, have had poor reproductive success. One female lost both yearling cubs within one week in 1989; bile from the one carcass contained 160,000 ppb of naphthalene (threshold for exposure is 1,000 ppb). This exposure ranks among the highest observed for mammals, following the spill. This study will continue monitoring of radio-collared bears in to further document reproductive success and survival of an existing sample of bears, including those known to have ingested oil in 1989.

BUDGET

	Cost		
	Restoration	ADF&G	NPS
Personal Services			
2 months Wildlife Biologist I	$ 4,000		$ 4,000[1]
2 months Wildlife Biologist III		$10,000	
2 months GS-11 Res. Mgmt. Spec.			$ 8,400
2 months GS-09 Res. Mgmt. Spec.			$ 7,200
Sub-Total			
8 months = .66 FTE = $33.6K	$ 4,000	$10,000	$19,600
Travel & Per Diem			
Sub-Total			
	$ 0	$ 0	$ 0
Contractual			
20 monitor. flights @ $1500 ea.	$19,300		$10,700[1]
Helicopter to retrieve collars & investigate mortalities	$ 3,000		$ 2,000[1]
Helicopter	$20,000		
Spotter Plane	$ 5,000		
Transportation to field camp	$ 1,500		
Fuel delivery to site	$ 2,000		$ 1,000[1]
Deploy & withdraw field camp	$ 2,000		
Support field camp			$ 3,000[1]
Sub-Total			
	$52,800	$ 0	$16,700

Equipment			
Telemetry equipment		$ 3,000[2]	$ 1,000[2]
Radio Collars (13 refrb/7 new)		$ 2,600[2]	$ 5,400[1]
Lab equip.		$ 2,000[2]	
Sub-Total	$ 0	$ 7,600	$ 6,400
Supplies			
USGS maps			$ 200[1]
Drugs and darting supplies	$ 700	$ 2,000[2]	
Avgas (5 drums)	$ 750		
Jet fuel (14 drums)	$ 1,750		
Sub-Total	$ 3,200	$ 2,000	$ 200
Total for OY 4	$ 60,000	$19,600	$42,900

Total Requested from Restoration Funds for 1992 (OY 4) $60,000

Budget for a subsequent Oil Year, OY 5 or 6

Restoration funds: removal of collars deployed in OY 4 $35,000

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[1]Funds being requested from NPS sources

[2]Equipment currently available in inventory, including 13 ADF&G collars that need to be refurbished

PROJECT: R6 - SEA OTTER RESTORATION PROJECT

AGENCY: DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

LINE ITEM	COST
Salary	308,600.00
Travel	34,850.00
Contracts	220,300.00
Supplies	65,600.00
Equipment	57,000.00
TOTAL	686,350.00 (8.17 FTES)

BACKGROUND/JUSTIFICATION: Damages to sea otters resulting from the *Exxon Valdez* oil spill (EVOS) included the recovery of 1,011 dead sea otters from within the spill zone. A synthesis of loss estimates suggest between 3,500 and 5,500 sea otters may have died as a result of acute exposure to oil. Chronic damages to sea otters may result from either sub-lethal initial exposure and continued exposure to environmental hydrocarbons. Preliminary findings of Coastal Habitat and Shellfish studies have identified elevated levels of hydrocarbons in intertidal and subtidal sediments and in several species of benthic marine invertebrates identified as sea otter prey. Continuing injury is indicated by significantly higher numbers of prime age sea otter carcasses being recovered post-spill than pre-spill in western Prince William Sound (PWS) and continued declines in sea otter abundance in oiled areas. Post-weaning pup mortality in the winter 1990/91 was significantly higher in western PWS than eastern PWS. Significant differences in blood parameters detected for adult males between eastern and western PWS; results suggest systemic hypersensitivity reactions in western males.

Evidence suggests that spill-related mortality may still be occurring within sea otter populations. It is necessary to continue monitoring to determine if sea otter populations will recover naturally or continue to decline in oiled areas of the Sound. Monitoring would include boat surveys, radio-tagging, and a study to document seasonal and annual weanling survival. This restoration project will also examine patterns of spatial distribution and identify important habitats. This information will enable land managers to enhance natural recovery through alternative land management techniques including controlling human disturbance, conservation easements, or land acquisition.

The restoration endpoint for this study is the complete recovery of the affected sea otter populations. Options to enhance recovery may include long-term protection of important habitats, planning for future environmental contamination events, and reduction in population stresses caused by various perturbations which may hinder recovery. Monitoring the population will determine the rate and point at which affected populations have returned to their pre-spill abundance. Understanding spatial and temporal patterns of habitat use by sea otters throughout most of the spill area will identify areas appropriate for protective status.

Sea otters are an important indicator of the health of the environment. Recovery of this species could indicate that the prey species upon which the sea otters depend are also recovering. Conversely, continued damages due to the spill will show up in slower than expected population recovery and physiological abnormalities. This study will support other restoration projects related to intertidal and subtidal systems and their recovery. It will also provide support to the boat-based marine bird surveys.

PROJECT R6: SEA OTTER [illegible]TORATION
AGENCY: DEPARTMENT O[illegible]IE INTERIOR/US FISH & WILDLI[illegible]ERVICE

BUDGET	FTE'S	$	
LINE 100: (SALARIES)			
GS 14	0.34	26,000	
GS 12	0.50	28,800	
GS 11	0.58	31,500	
GS 9/11	0.83	42,000	
GS 9	0.83	33,000	
GS 7	3.08	92,500	
GS 6	1.34	36,800	
GS 5	0.67	16,000	
HAZARD DUTY PAY		2,000	
SUB-TOTAL SALARIES	8.17		308,600
LINE 200: (TRAVEL/PER DIEM)			
TRAIN FARE		6,000	
AIR FARE		6,350	
FERRY		1,000	
PER DIEM		21,500	
SUB-TOTAL TRAVEL/PER DIEM			34,850
LINE 300: (CONTRACTS)			
ANALYSIS OF DATA		7,000	
AIRCRAFT CHARTER		31,000	
TOOTH PREPARATION & SECTIONING		300	
TOOTH READING		300	
VESSEL CHARTER		53,750	
NECROPSIES		4,500	
VETERINARIAN		8,750	
RADIO TRANSMITTERS		48,000	
BLOOD ANALYSES		3,200	
AERIAL RADIOTRACKING		60,000	
SHIPPING		3,500	
SUB-TOTAL CONTRACTS			220,300
LINE 400: (SUPPLIES)			
AIRCRAFT/BOAT FUEL		51,200	
FOOD/GENERAL SUPPLIES		3,200	
MISCELLANEOUS SUPPLIES		11,200	
SUB-TOTAL SUPPLIES			65,600
LINE 500: (EQUIPMENT)			
SURVIVAL/SAFETY EQUIPMENT		6,000	
VESSEL MAINTENANCE		15,000	
RADIOS		2,000	
MISCELLANEOUS EQUIPMENT/GEAR		7,500	
MISCELLANEOUS MAINTENANCE		1,500	
RADIOTRACKING GEAR		15,000	
OUTBOARD MAINTENANCE		10,000	
SUB-TOTAL EQUIPMENT			57,000
TOTAL	8.17		686,350

PROJECT: R11 - MURRE RESTORATION PROJECT

AGENCY: DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

LINE ITEM	COST
Salaries	$227,976.00
Travel	9,845.00
Contractual	212,950.00
Supplies	44,600.00
Equipment	75,391.00
TOTAL	$570,762.00 (4.75 FTES)

BACKGROUND/JUSTIFICATION: There are approximately 320 seabird colonies, not including the Semidi Islands, that occur within the area affected by the Exxon Valdez oil spill (EVOS). They contained about 319,130 breeding murres. Diving seabirds are known to be easily impacted by oil spills. In addition, these species are long-lived with low reproductive rates, thus making any mortality of adults a critical factor in the species' ability to recover from loss. As the oil exited Prince William Sound (PWS), it collided with large rafts of breeding age murres congregating around major nesting colonies. The resulting mortality included an estimated 198,000 adult breeding birds, representing 60 to 70 percent of the total breeding population of certain major colonies. Extrapolating to include mortality of non-breeders, mortality is estimated to be as high as 300,000 birds. This loss resulted in a major disruption of breeding behavior and phenology resulting in reproductive failure for 1989-91. Dramatic decreases in the number of murres at nesting colonies in the EVOS area were noted in 1989-91 surveys. Murres at all sites associated with oil had either low or no success in producing chicks with either very late egg laying or none at all in 1989-91.

Natural recovery of murres, if it occurs, will occur at a very slow rate and can only be detectable over a long term. Although there are some initial indications that some colonies or portions of colonies are returning to more normal phenology, continued monitoring is needed to determine if these changes will continue and result in improved reproductive success. The objective here is to monitor the recovery of impacted colonies to determine the rate of recovery considering the large mortality of adult breeding birds and at least three years of reproductive failure. The documentation for this recovery will be useful in planning future more specific restoration measures. Also critical to murre population recovery is minimization of human disturbance around the impacted colonies. Charter boat and commercial fishing activities are known sources of human disturbance to seabird colonies. Public education programs, law enforcement, and increased presence of Service personnel at colony sites will improve public awareness and reduce human disturbance at seabird colonies.

A direct restoration measure expected to be achieved through this project is the reduction of existing disturbance factors that cause murres to leave the cliffs, exposing eggs and chicks to predation. This project will also aid in determining specific sites and aspects of murre biology that could benefit from additional restoration measures.

PROJECT: R11 - MURRE RESTORATION PROJECT

AGENCY: DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

BUDGET

	Chiswells	Barrens	Semidis	AK. Pen.	Middleton & Spike Camp
1. Salaries					
Project Leader (.65 FTE)	22,195	22,195			
Asst. Project Leader, (1 FTE)	21,440	21,440			
(1) Site Leader, GS7-7 (.6 FTE)			21,000		
(1) Biotech., GS5 (.5 FTE)			12,740		
(1) Biotech., GS5 (.4 FTE)				9,100	
(2) Biotech., GS5 (.4 FTE)			18,200		
(3) Biotech., GS5 (.4 FTE)	12,285	12,285			
(2) Biotech., GS5 (.05 FTE)					1,600
(1) Biotech., GS4 (.35 FTE)					6,700
SCA volunteers (travel included)				8,000	3,000
Overtime	4,500	4,500	13,500	3,500	800
Site Totals	60,420	60,420	65,440	20,600	12,100
Administrative Support (Combined)					
(2) P.T. Clerk Typist (GS4) (.2 FTE)	5,200				
(1) P.T. Budget Asst (GS7) (.2 FTE)	3,796				
Combined Total	**227,978**				
TOTAL FTES 4.75					
2. Contracts					
Charter boat @ $1800/day (77 days)	25,200	44,100	44,100	25,200	
Charter helicopter				13,000	6,000
Charters (goose and otter flights)				6,500	
USFWS aircraft (resupplies)				2,000	
Fuel/Boat	1,500	2,500	1,000	6,000	
M/V Tiglax @ $3300/day (7 days)			23,100		
Site Totals	26,700	46,600	68,200	52,700	6,000
Office space - Homer (combined)	9,000				
Combined Total	**209,200**				
3. Equipment (Combined locations)					
Camp/Survival Gear	20,000				
Outboard Replacement (two) for M/V Sandlance (25ft Boston Whaler)	16,391				
Computer Replacement for Failing Laptops	9,000				
High Resolution Video Camera and VCR, Time Lapse Cameras	30,000				
Combined Total	**75,391**				
4. Supplies/Services					
Repairs/Boats, motors, etc.	4,000	4,500	2,500	1,500	
Field/Office/Lab Supplies	500	1,500	500	1,000	2,000
Field Food (65 days @ $10 each or 120 days @ $10 each)	2,050	2,750	5,000	10,000	3,400
Site Totals	6,550	8,750	8,000	12,500	5,400
Storage Space (combined)	500				
Vehicle (combined)	500				
Telephone (combined)	2,400				
Combined Total	**44,800**				

5. Travel/Per Diem

camp per diem @ $3/day	475	475	1,440	945
10 R/T Homer-Anchorage		1,600		
1 R/T Homer/Dutch Harbor (supervisor)			800	
1 R/T Homer/King Salmon				400
Anchorage per diem @ $130/day	2,210			
Site Totals	2,685	2,075	2,240	1,345
Bunkhouse space in Homer (combined)	1,500			
Combined Total	9,845			

6. Printing and Reproduction	750	750	1,250	1,000
Combined Total	3,750			

TOTAL ESTIMATED COST/ALL SITES 570,762

Assumptions:
1)Continued use of M/V Sandlance
2)We are able to contract an appropriate support vessel in time and for the amount stated in the budget ($1800/day)

PROJECT: **B13 - BOAT SURVEYS TO DETERMINE THE DISTRIBUTION AND ABUNDANCE OF MIGRATORY BIRDS AND SEA OTTERS**

AGENCY: **DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE**

LINE ITEM	COST
Salaries	$106,550.00
Travel	12,000.00
Contractual	80,000.00
Supplies	10,000.00
Equipment	32,000.00
TOTAL	240,550.00 (3 FTES)

BACKGROUND/JUSTIFICATION: Boat-based surveys for birds and mammals in Prince William Sound include census of both pelagic and shoreline areas; over 120 species of birds and 20 species of mammals have been counted on surveys. Bird populations in Prince William Sound declined since pre-spill surveys for 16 species or species groups including grebes, cormorants, Northern Pintail, Harlequin Duck, Oldsquaw, scoters, goldeneyes, Bufflehead, Black Oystercatcher, Bonapart's Gull, Black-legged Kittiwake, Arctic Tern, Pigeon Guillemot, murrelets, and Northwest Crow. More than 30,000 carcasses representing over 90 species of birds were collected from the spill zone in 1989. In addition, both direct and lingering population effects of the spill have been demonstrated in NRDA studies on Harlequin Duck, Black Oystercatcher, Black-legged Kittiwake, Marbled Murrelet, murres, and Pigeon Guillemot. Intensive studies have also revealed evidence of damage to populations of sea otters.

Restoration of injured marine bird species will require population estimates to determine whether declines continue, and to document recovery. This project would continue population surveys established in Prince William Sound and extend surveys to the remaining spill zone. These surveys provide a cost-effective, statistically rigorous method for monitoring bird populations. Even when baseline data do not exist, repeated surveys can show whether populations are stable. Surveys also provide valuable information on the distribution and habitat use of these species. This would be useful in enhancing species recovery through alternative land management techniques. Survey methods are flexible enough to provide for collection of more detailed information such as that needed for other species specific restoration projects.

Although this project does not easily address a specific restoration endpoint, it is an important tool to monitor recovery of populations of bird and mammal species damaged by the oil spill. It also provides habitat use and distribution information useful in determining land management alternatives that would enhance species natural recovery.

This project provides cost-effective support for other restoration studies including Bald Eagles, Marbled Murrelets, Sea Otters, Harlequin Ducks, and Pigeon Guillemots. Data can be used to generate GIS distribution maps for all species observed. It is important to continue monitoring populations within the Sound in 1992 so that post-spill trends can be established immediately following the spill and beyond. Continuation of these surveys will also enhance the development of a standard design for surveys in other areas of the spill zone.

PROJECT: R13 - BOAT SURVEYS TO DETERMINE THE DISTRIBUTION AND ABUNDANCE OF MIGRATORY BIRDS AND SEA OTTERS

AGENCY: DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

BUDGET

Line 100: Salaries

Personnel:		
Principal Investigator (GS-11, 20pp)		$ 34,000
Supervisory Biologist (GM-13, 1pp)		3,100
Marine Mammals Biologist (GS-11, 5 pp)		8,750
Biologist (GS-09, 20 pp)		29,000
5 Bio. Technicians (GS-05, 4 pp ea.)		19,400
1 Bio. Technician (GS-05, 5 pp)		5,000
Administrative Support (GS-03, 3pp)		2,300
Expediter (GS-05, 5pp)		5,000
SALARIES TOTAL	$106,550	
FTES TOTAL	3 FTES	

Line 200: Travel/Per Diem 12,000

Line 300: Contracts

Charter Vessel (March:30 d @ $1000/d)		$ 30,000
Fuel and fuel transport		30,000
Boat annual maintenance (3 boats)		20,000
CONTRACTS TOTAL	$ 80,000	

Line 400: Supplies

Food		$ 5,000
Miscellaneous		5,000
SUPPLIES TOTAL	$ 10,000	

Line 500: Equipment

Replacement boat motors (2)		$ 30,000
Electronic equipment		2,000
EQUIPMENT TOTAL	$ 32,000	
TOTAL 1992 COST:	$240,550	

PROJECT: R17 - BLACK OYSTERCATCHER RESTORATION PROJECT

AGENCY: DEPARTMENT OF INTERIOR, FISH AND WILDLIFE SERVICE

LINE ITEM	COST
Salaries	$35,100.00
Travel	10,000.00
Contractual	0.00
Supplies	6,000.00
Equipment	8,000.00
TOTAL	59,100.00 (0.9 FTES)

BACKGROUND/JUSTIFICATION: The Black Oystercatcher is an obligate member of the rocky intertidal community. Thus deleterious effects of the Exxon Valdez oil spill (EVOS) resulted in reduced productivity in Prince William Sound. 1989 data indicated that the relative egg volume of clutches was lower. Although clutch size, hatching success or fledgling success did not differ, growth rate of chicks was significantly lower in 1991. Additionally, intertidal prey organisms of the oystercatcher experienced diminished productivity and direct mortality.

Black Oystercatchers have proven to be a convenient subject for studying the effects on avian reproductive success of the oiling of an intertidal area. Continued habitat deterioration (mortality of intertidal organisms), and ingestion of hydrocarbons may produce significant changes in adult physiological condition and hence breeding success in 1990. In addition there may be detrimental effects for fledglings or immatures, such as increased morality rates over the winter or inability to breed. Continued studies would monitor reproductive success to ensure recovery. Habitat variables of nest site and foraging territories would be measured; this information would be useful in protecting important habitat through alternative land management techniques.

In summary, the restoration endpoints of this study are to monitor natural recovery of the oystercatcher population in Prince William Sound, explore the role of oystercatchers in the recovery of invertebrate species, and provide information needed to protect suitable marine habitat.

Implementing this project in 1992 will guarantee the greatest continuity with work begun in 1989. Delaying implementation may make oil-induced effects between predators and prey increasingly difficult to detect. Study of the habitat requirements of oystercatchers will contribute to overall habitat assessment in the recovery of the Sound.

PROJECT: R17 - BLACK OYSTERCATCHER RESTORATION PROJECT

AGENCY: DEPARTMENT OF INTERIOR, FISH AND WILDLIFE SERVICE

BUDGET

Line 100: Salaries

Supervisory Biologist	GM-13	(1 pp)	3,100.00
Principal Investigator	GS- 9	(12 pp)	17,000.00
Biotechnician	GS- 5	(10 pp)	10,000.00
Overtime pay			5,000.00
		Salary Total	35,100.00
		Total FTES 0.9 FTE	
Line 200: Travel/Per Diem			12,000.00
Line 300: Contracts			0.00
Line 400: Supplies			
Food			2,500.00
Fuel			3,500.00
		Supplies Total	6,000.00
Line 500: Equipment			
Radios			500.00
14' Achilles inflatable			4,000.00
Generator			500.00
Weatherport			2,000.00
Camp Equipment			1,000.00
		Equipment Total	8,000.00
		PROJECT TOTAL	59,100.00

PROJECT: R60C PLUS BIOMETRIC SUPPORT PROJECT LEADER: Sam Sharr

PROJECT NO: Restoration 60C LOCATION: Cordova PHONE: (907)424-3212

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	55.3	79.1	134.4
72000	1.1	4.7	5.8
73000	23.0	23.8	46.8
74000	4.3	7.2	11.5
75000	0.4	0.3	0.7
TOTAL	84.1	115.1	199.2

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS: This project will continue monitoring injuries to pink salmon eggs and pre-emergent fry. Injuries to pink salmon from spawning ground oil contamination have included statistically significant increases in egg mortality as well as a high incidence of physical and genetic abnormalities in alevins and fry.

PROJECT: Biometric Support for R60C PROJECT LEADER: Brannian

PROJECT NO: R 60 C LOCATION: Anchorage PHONE: 267-2118

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	2.9	11.7	14.6
72000	0.3	3.0	3.3
73000	0.1	0.4	0.5
74000	0.1	0.5	0.6
75000	0.0	0.3	0.3
TOTAL	3.4	15.9	19.3

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS:

Includes 2 mm Biometrician II, 1 mm Biometrician I, and 4 mm Analyst/Programmer II.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	4 MO	8 MO	LOCATION	INCUMBENT	SUPERVISOR
1271	19E	Biometrician II	0.5	0.5	Anchorage	Bue	Brannian
7072	17B	Biometrician I		1	Anchorage	Evans	Bue
7087	15A	Analyst/Programmer		1	Anchorage	Vacant	Evans

FULL TIME EQUIVALENTS – FTEs (Months/12): 0.25

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel	3 Trips Cordova	0.2	0.5	0.7
72270 Administrative Travel	1 Trip Juneau	0.0	0.5	0.5
72300 Conventions/Meeting Travel	1 Trip Seattle	0.0	1.0	1.0
72360 Moving/Relocation Expenses		0.0	0.0	0.0
72500 Per Diem	Per Diem	0.1	1.0	1.1
		0.0	0.0	0.0
	SUBTOTAL	0.3	3.0	3.3

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services		0.0	0.0	0.0
73300 Communication	Telephone; Data Line; Postage	0.0	0.0	0.0
73400 Transportation	Air Charter; Air Freight	0.0	0.0	0.0
73420 Trans–State Equip Fleet Fees		0.0	0.0	0.0
73500 Advertising, Printing, Binding	Visual Aid Preparation; Special Printing	0.0	0.0	0.0
73600 Public Utilities Services		0.0	0.0	0.0
73700 Minor Repair/Maintenance		0.0	0.0	0.0
73800 Rental–Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental–Machinery/Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services	Literature Search	0.0	0.0	0.0
		0.0	0.0	0.0
	SUBTOTAL	0.1	0.4	31.7

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies		0.0	0.0	0.0
74520 Professional/Scientific Supplies	Scientific Reference Material	0.0	0.0	0.0
74560 Data Processing Supplies	Computer Paper; ribbons, etc.	0.0	0.0	0.0
74600 Other operating Supplies	Software	0.0	0.0	0.0
74650 Repair & Maintenance Supplies	Computer Repair	0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.1	0.5	0.6

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment	Microcomputer Parts	0.0	0.0	0.0
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment	File Cabinets	0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.0	0.3	0.3

OY4

PROJECT: Damage to Pink Salmon Egg and Fry		PROJECT LEADER: Sam Sharr	
PROJECT NO:	R 60 C	LOCATION: Cordova	PHONE: 424-3212

LINE ITEM	REQUEST		
	4 MONTHS	8 MONTHS	12 MONTHS
71000	52.4	67.4	119.8
72000	0.8	1.7	2.5
73000	22.9	23.4	46.3
74000	4.2	6.7	10.9
75000	0.4	0.0	0.4
TOTAL	80.7	99.2	179.9

This is to be the department's FY 93 budget request for the above project. On the following pages, please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS:

This budget is for continued monitoring of damages to pink salmon eggs and pre-emergent fry.

71000 PERSONAL SERVICES– LIST POSITIONS (AMOUNTS WILL BE ...ULATED FOR YOU)

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	4 MONTH	OT HOUR	8 MONTH	OT HOUR	LOCATION	INCUMBENT	SUPERVISOR
11–7043	16/D	FB II	1	0	2	0	Cordova	Sharp	Sharr
11–N232	14/A	FB I	3	160	7	160	Cordova	Craig	Sharr
11–N185	13/A	RA I	3	90	0	0	Cordova	Rosen	Craig
11–N227	11/A	FWT III	1	40	2	80	Cordova	Saddler	Craig
11–N228	11/A	FWT III	1	40	1	40	Cordova	Speer	Craig
11–N???	11/A	FWT III	1	40	1	40	Cordova	Vacant	Craig
11–N???	11/A	FWT II	1	40	1	40	Cordova	Vacant	Craig
11–N???	11/A	FWT II	1	40	1	40	Cordova	Vacant	Craig
Full Time Equvilents =		2.3							

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel		0.0	0.0	0.0
72270 Administrative Travel	4 Rnd Trips Cordova/Anchorage (meetings & training)	0.4	0.4	0.8
72300 Conventions & Meeting Travel	1 Out of State Rnd Trip (scientific meeting)	0.0	0.5	0.5
72360 Moving or Relocation Expense		0.0	0.0	0.0
72500 Per Diem	12 days @ $100/Day	0.4	0.8	1.2
		0.0	0.0	0.0
	SUBTOTAL	0.8	1.7	2.5

73000 CONTRACTUAL	DESCRIPTION		4 MOS	8 MOS	12 MOS
73100 Professional Services			0.0	0.0	0.0
73300 Communication			0.0	0.0	0.0
73400 Transportation	Vessel Charter @ $1000/Day		19.0	19.0	38.0
73420 Trans–State Equip Fleet Fees			0.6	1.5	2.1
73500 Advertising, Printing & Binding			0.0	0.0	0.0
73600 Public Utilities Services	Phones		0.1	0.3	0.4
73700 Minor Repair & Maintenance	Computer repair, net, outboard & pump repair		3.0	2.0	5.0
73800 Rental–Land, Buildings & Space	Storage Rental		0.2	0.6	0.8
73860 Rental–Machinery & Equipment			0.0	0.0	0.0
73900 Other Expenditures & Services			0.0	0.0	0.0
		SUBTOTAL	22.9	23.4	46.3

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74220 Office & Library Supplies	Pencils, paper, general	0.5	1.0	1.5
74520 Professional & Scientific Supplies	Chemicals & jars	1.5	1.5	3.0
74560 Data Processing Supplies	Tide software, Spreadsheet upgrades, Statistical software	2.0	4.0	6.0
74600 Other Operating Supplies		0.0	0.0	0.0
74650 Repair & Maintenance Supplies	Misc pump & outboard part	0.2	0.2	0.4
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	4.2	6.7	10.9

75000 EQUIPMENT	DESCRIPTION	8 MOS	4 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment	Hand held radio (replacements)	0.4	0.0	0.4
75830 Data Processing Equipment		0.0	0.0	0.0
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
76050 Furniture & Office Equipment		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.4	0.0	0.4

Killer Whale Monitoring and Habitat Studies

Study ID Number: Marine Mammal Study Number 82

Project Leaders: Marilyn E. Dahlheim and Thomas R. Loughlin

Lead Agency: National Oceanic and Atmospheric Administration

Statement of Justification

Photographs of individual killer whales occurring in Prince William Sound were collected from May to September 1989 and 1991 to assess the potential impacts of the Exxon Valdez oil spill on killer whale life history and ecology. Research vessels have traversed over 25,000 nautical miles in search of whales or while photographing whales, reflecting 617 days of field research for the three-year period. An unusually high number of killer whales were reported missing from one of the resident pods named AB pod. The stability of resident pods of killer whales is such that when an animal is listed as missing for more than one year, that animal is considered dead. Prior to the oil spill, the number of whales in AB pod changed from 35 to 36 (1984-1988), indicating an increasing trend in pod numbers. During this time period, 8 whales died and 9 whales were born. During 1989, 7 whales were reported missing. During 1990, six additional whales were added to the list. This represents a mortality rate of approximately 20%; an order of magnitude greater than that seen in the 20-year study in British Columbia and Washington State (1.8%) and more than three times the average mortality rate (6.1%) seen in AB pod during the 1984-88 period. In 1991, one whale was reported missing and one whale was born into AB pod. In addition to missing whales in this pod, significant changes occurred in the pod's social structure. Although carcasses of missing whales have not been found, there is a correlation between the discovery of unusually high mortality in AB pod and the Exxon Valdez oil spill.

Data collected during monitoring studies and habitat research would provide valuable information on the life history and ecology of Prince William Sound killer whales. Continued monitoring of the status of AB pod in Prince William Sound through photo-identification studies is required to document natural recovery of the injured population. In addition, restoration of killer whales can be enhanced by protecting sensitive habitats, minimizing fishery interactions, reducing or redirecting other human-use impacts, and promoting public education. The data obtained during this project would be extremely beneficial to our overall understanding of North Pacific killer whales.

Detailed Budget

A. Costs (in thousands of dollars = K)

	Line					
	100	200	300	400	500	Total
Projected Expenses 3/92 - 2/93	44.8	9.0	90.0	8.3	25.8	$177.9K

PROJECTED EXPENDITURE BREAKDOWN

Line 100 - Salaries

Level	Name	Months	Salaries & Benefits/Month	Total
GM-14	Loughlin (PI)	1.0	5,800.00	5,800.00
GS-12	Dahlheim (PI)	5.0	4,200.00	21,000.00
GS-09	Assistant (temp)	6.0	3,000.00	18,000.00
			Total	$44,800.00

Line 200 - Travel

4 RT Seattle, WA. to Alaska to attend meetings (Dahlheim and Loughlin)
Airfare $600/trip x 8 trips = $4,800.00
Per diem at $120/day x 24 days (representing 4 trips at 3 days each x 2 people) = $2,880.00
Subtotal - $7,680.00

1 RT Seattle, WA. to Prince William Sound to conduct field work/monitor contract.
Airfare to Anchorage and transportation to Prince William Sound
Subtotal = $ 800.00

2 RT Seattle, WA. to Newport, Oregon to consult with experts in the field of telemetry systems.

Estimated costs (Private auto and per diem)
at $250/trip

Subtotal = $ 500.00

Total $ 9,000.00

Line 300 - Contracts

Contract for killer whale photo-identification studies in Prince William Sound ($60.0K) and consultant/contract fees for the design and modification of satellite attachment and delivery systems ($30.0K).

Total $ 90,000.00

Line 400 - Supplies

Necessary supplies for field work to include mustang and survival suits, camping equipment, marine radios, and camera equipment ($8.3K).

Total $8,300.00

Line 500 - Equipment

Purchase of delivery system for tagging research ($5.0K), and six satellite tags ($3.5K each = $21.0K).

Total $25,800.00

GRAND TOTAL $177,900.00

PROJECT: Dolly Varden / cutthroat Monitoring PROJECT LEADER: Kelly Hepler

PROJECT NO: Restoration Science #90 LOCATION: Anchorage PHONE:

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	125.5	36.0	161.5
72000	9.7	7.8	17.5
73000	19.9	26.7	46.6
74000	35.5	3.5	39.0
75000	0.0	0.0	0.0
TOTAL	190.6	74.0	264.6

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS:

This study will monitor the persistence of injuries resulting from the March 1989 Exxon Valdez oil spill which were documented by the NRDA study # 5. The goal of the NRDA study was to compare the survival and growth of populations of Dolly Varden, Salvelinus malma, and cutthroat trout, Oncorhynchus clarki, affected by the oil spill in Prince William Sound (PWS). The NRDA study conducted for the three summers following the spill (1989, 1990, and 1991) conclusively demonstrated a significant reduction in survival for Dolly Varden in oiled areas; and a significant reduction in growth and survival of cutthroat trout from an oiled area. It is important to monitor the persistence of these effects in order to track the recovery of these stocks which will ultimately influence decisions regarding the management of these species in PWS. This data will compliment that collected from the Restoration Project (RPWG #106) to provide the information needed for the development of the restoration management plan.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	MOS	LOCATION	INCUMBENT	SUPERVISOR
11-4038	18 F	Fisheries Biologist III	1.0	Anchorage	Hepler	McBride
11-7057	11 F	Fisheries Technician III	7.0	Anchorage	Miller	Hoffmann
11-7066	11 F	Fisheries Technician III	4.0	Anchorage	Capillio	Hoffmann
new	11 A	Fisheries Technician III	3.5	Anchorage	Hechart	Hoffmann
new	11 A	Fisheries Technician III	3.5	Cordova	Monaco	Hoffmann
new	11 A	Fisheries Technician III	3.5	Cordova	Middelstadt	Hoffmann
new	11 A	Fisheries Technician III	3.5	Cordova	Sandy	Hoffmann
new	7 A	Fisheries Technician I	3.5	Cordova	Baylog	Hoffmann
new	7 A	Fisheries Technician I	3.5	Cordova	Miles	Hoffmann
new	7 A	Fisheries Technician I	3.5	Cordova	vacant	Hoffmann
new	7 A	Fisheries Technician I	3.5	Cordova	vacant	Hoffmann
new	7 A	Fisheries Technician I	3.5	Cordova	vacant	Hoffmann
new	7 A	Fisheries Technician I	3.5	Cordova	vacant	Hoffmann
11-7012	19 D	Biometrician II	6.0	Anchorage	Hansen	Bernard
		overtime	5.0			
			0.0			
			0.0			

FULL TIME EQUIVALENTS - FTEs (Months/12): 4.8

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel	Commercial travel - Cordova	6.4	2.0	8.4
72270 Administrative Travel	Commercial Travel - Juneau	0.9	2.0	2.9
72300 Conventions/Meeting Travel	Commercial Traverl - Seattle	1.0	2.0	3.0
72360 Moving/Relocation Expenses		0.0	0.0	0.0
72500 Per Diem	per diem	1.4	1.8	3.2
		0.0	0.0	0.0
	SUBTOTAL	9.7	7.8	17.5

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73400 Transportation	vessel	1.0	6.0	7.0
73400 Transportation	fixed wing	15.4	5.0	20.4
73400 Transportation	Helicopter	0.0	10.0	10.0
73420 Trans-State Equip Fleet Fees	truck lease	2.0	4.0	6.0
73500 Advertising, Printing, Binding		0.0	0.0	0.0
73600 Public Utilities Services		0.0	0.0	0.0
73700 Minor Repair/Maintenance	computer repair	0.0	0.2	0.2
73800 Rental-Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental-Machinery/Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services	freight	1.5	1.5	3.0
		0.0	0.0	0.0
	SUBTOTAL	19.9	26.7	46.6

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies	office supplies	0.5	0.5	1.0
74520 Professional/Scientific Supplies	tags	9.0	0.0	9.0
74560 Data Processing Supplies	diskettes, tapes, software	1.0	1.0	2.0
74600 Other operating Supplies	camp/field gear	4.5	0.5	5.0
74650 Repair & Maintenance Supplies	weir materials, gas, oil	3.0	0.0	3.0
OTHER	groceries	17.0	1.0	18.0
OTHER	biometrics operations	0.5	0.5	1.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	35.5	3.5	39.0

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment		0.0	0.0	0.0
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.0	0.0	0.0

ALASKA DEPARTMENT OF FISH & GAME

OY4

PROJECT: Biometric support - DV/CT Monitoring PROJECT LEADER: Andy Hoffmann

PROJECT NO: Restoration Science #90 LOCATION: Anchorage PHONE: 267-2238

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	10.5	21.0	31.5
72000	0.8	2.7	3.5
73000	1.4	0.3	1.7
74000	0.3	0.7	1.0
75000	0.0	0.0	0.0
TOTAL	13.0	24.6	37.6

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS:

Biometric support for the Dolly Varden / cutthroat trout monitoring project #90

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	MOS	LOCATION	INCUMBENT	SUPERVISOR
11-7012	19 D	Biometrician II	6.0	Anchorage	P. Hansen	D. Bernard
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			

FULL TIME EQUIVALENTS - FTEs (Months/12): 0.5

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel	Commercial travel - Cordova	0.4	0.0	0.4
72270 Administrative Travel	Commercial travel - Juneau	0.0	0.9	0.9
72300 Conventions/Meeting Travel	Commercial travel - Seattle	0.0	1.0	1.0
72360 Moving/Relocation Expenses		0.0	0.0	0.0
72500 Per Diem	Per Diem	0.4	0.8	1.2
		0.0	0.0	0.0
	SUBTOTAL	0.8	2.7	3.5

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services		0.0	0.0	0.0
73300 Communication		0.0	0.0	0.0
73400 Transportation	Fix-winged charter	1.4	0.0	1.4
73420 Trans-State Equip Fleet Fees		0.0	0.0	0.0
73500 Advertising, Printing, Binding		0.0	0.0	0.0
73600 Public Utilities Services		0.0	0.0	0.0
73700 Minor Repair/Maintenance	Computer repair	0.0	0.3	0.3
73800 Rental-Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental-Machinery/Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services		0.0	0.0	0.0
		0.0	0.0	0.0
	SUBTOTAL	1.4	0.3	1.7

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies	Office supplies	0.1	0.2	0.3
74520 Professional/Scientific Supplies		0.0	0.0	0.0
74560 Data Processing Supplies	diskettes, software	0.1	0.4	0.5
74600 Other operating Supplies		0.0	0.0	0.0
74650 Repair & Maintenance Supplies		0.0	0.0	0.0
OTHER	books	0.1	0.2	0.3
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.3	0.7	1.0

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment		0.0	0.0	0.0
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.0	0.0	0.0

PROJECT: River Otter Restoration PROJECT LEADER: Jim Faro

PROJECT NO: R 95 LOCATION: Soldotna PHONE: 262-9369

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	0.0	50.0	50.0
72000	0.0	3.5	3.5
73000	0.0	82.5	82.5
74000	0.0	3.0	3.0
75000	0.0	0.0	0.0
TOTAL	0.0	139.0	139.0

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

DESCRIPTION/JUSTIFICATION:
River otterswer and continue to be impacted by the oil spill through direct mortality and long term sub-lethal effects. They are still encountering oil which is seeping up from buried pockets or are acquiring toxic hydrocarbons secondarily from species in their diet. The otter restoration study will continue to monitor the status of the population in Prince William Sound. A habitat model will be developed and validated which can be used to develop pre- and post-spill densities of otters throughout Prince William Sound. This information is critical for determining requirements for restoration. In addition, this study will continue to collect information on genetic diversity for eventual otter recolonization or relocation. The status of otter's food chain will be monitored for recovery in species richness.
This should track recovery of the otter population. Much of this work is proposed in conjunction with the NRDA River Otter Damage Assessment study. One-half of the Principal Investigator's salary is covered in this proposal and the other half in the Damage Assessment proposal.

It is absolutely essential to continue this study. Because variables samples such as blood values and length-weight relationships are expected to change over time, even a delay would disrupt collection of trend data making statistical comparisons more difficult. Some variables could deteriorate to the degree that measuring differences could be cost prohibitive. If we do not obtain parameters for 1992, we may never be able to document trends and predict how long these differences may be detectable thus rendering any restoration of river otters ineffective.

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies				
74520 Professional/Scientific Supplies				
74560 Data Processing Supplies				
74600 Other operating Supplies	OB gas & oil		2.0	2.0
74650 Repair & Maintenance Supplies				
OTHER				
OTHER				
OTHER				
	SUBTOTAL	0.0	2.0	2.0

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip				
75790 Communication Equipment				
75830 Data Processing Equipment				
75870 Laboratory & Scientific Equip				
75940 Special Equipment				
75050 Furniture & Office Equipment				
OTHER				
OTHER				
OTHER				
	SUBTOTAL	0.0	0.0	0.0

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel	Alaska Railroad Whittier/Portag		1.5	
72270 Administrative Travel	2 RT Sol/Fbks;1 RT Sol/Anch		1.0	1.0
72300 Conventions/Meeting Travel				
72360 Moving/Relocation Expenses				
72500 Per Diem				
	SUBTOTAL	0.0	2.5	2.5

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services	Data entry services UAF		3.0	3.0
73300 Communication	Scat Analysis Services UAF		16.0	16.0
73400 Transportation	Vessel Charter Scat Collection		20.0	20.0
73420 Trans-State Equip Fleet Fees	Ves.Chart.Hab.Truthing 7/1-8/14		41.0	41.0
73500 Advertising, Printing, Binding	Air Charter		1.5	1.5
73600 Public Utilities Services				
73700 Minor Repair/Maintenance	Outboard & Skiffs		1.0	1.0
73800 Rental-Land/Buildings/Machinery				
73860 Rental-Machinery/Equipment				
73900 Other Expenditures & Services				
	SUBTOTAL	0.0	82.5	82.5

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	4 MOS	8 MOS	12 MOS	LOCATION	INCUMBENT	SUPERVISOR
11-7027	18L	Wildlife Biologist III	0.0	6.0	6.0	Soldotna	Jim Faro	Don Calkins
11-7071	11J	Fish/Wildlife Tech III	0.0	2.0	2.0	Anchorage	VanDen Bosch	Jim Faro
								Sam Patten
								Dave Crowley
								Sam Patten
								Dave Crowley
								Dave Crowley
								Dave Crowley
								Dave Crowley

FULL TIME EQUIVALENTS - FTEs (Months/12): 0.0 0.8 0.8

R92 GEOGRAPHIC INFORMATION SYSTEM MAPPING AND ANALYSIS

AGENCY: DEPARTMENT OF INTERIOR, FISH AND WILDLIFE SERVICE

LINE ITEM	COST
Salaries	$155,000.00
Travel	5,000.00
Contractual	17,000.00
Supplies	10,000.00
Equipment	13,000.00
TOTAL	200,000.00 (3.25 FTES)

BACKGROUND/JUSTIFICATION: The geographic information system (GIS) technical group was created following the Exxon Valdez oil spill (EVOS) to acquire, develop, and distribute a centralized Natural Resource Damage Assessment (NRDA) database. The information was divided into two basic themes: primary and thematic. Primary data layers include general inventory information such as shoreline oiling, surface oiling, shoreline treatment, coastal morphology, bathymetry, hydrography, wildlife habitat, land status, land cover, and land use. Thematic layers are specific to individual NRDA studies and include hydrocarbon information, wildlife distribution and abundance data, and survey transect designs. In coordination with the Alaska Department of Natural Resources (ADNR) the GIS workload was distributed to better utilize computer resources and staff expertise. The ADNR took the lead in primary data layer development and map production with assistance from U.S. Fish and Wildlife Service (USFWS) in data acquisition, editing, and quality control. The USFWS focused mainly on development of thematic data layers for wildlife resources and provision of analytical services to NRDA studies.

The restoration process is well positioned to take clear advantage of the technical group's database and expertise. The GIS will provide a reservoir of the most comprehensive geographic data and assure the consistency and quality of these data. It also will provide managers, investigators, and peer reviewers with tools for spatial analysis as a means to better understand complex data. The overlay analysis and data integration capabilities of GIS provides an opportunity to create summaries useful for further statistical analysis by investigators. Where appropriate, the GIS system can provide a means to extrapolate recovery, or lack thereof, assessed by the individual studies and to integrate the results into an ecosystem based recovery picture. GIS also serves as a stable repository to protect the long term public interest in these scientific and resource inventory data.

The USFWS will use GIS primarily as synthesis and analysis tool for restoration activities. Examples of specific applications include: (a) synthesizing bathymetry, sediment, invertebrate prey, radio telemetry and distribution data to define habitat as an aid in understanding sea otter injury and recovery; (b) integrating anadromous stream, landcover, timber, and shoreline type data to devise and validate a habitat model for bald eagles; (c) relating marbled murrelet nest and activity data with forest cover and timber information to help describe habitat requirements; and (d) using results from synthesis efforts to identify land protection measures needed to enhance recovery.

R92 GEOGRAPHIC INFORMATION SYSTEM MAPPING AND ANALYSIS

AGENCY: DEPARTMENT OF INTERIOR, FISH AND WILDLIFE SERVICE

BUDGET

Line 100: Salaries

1 FTE, GS-12	61,400.00	
1 FTE, GS-11	53,300.00	
1 FTE, GS-07	33,300.00	
.25 FTE, GS-05	7,000.00	
	Subtotal Salaries	155,000.00
	Total FTES 3.25	

Line 200: Travel 5,000.00

Administrative, Meetings, Training, Conferences

Line 300: Contractual 17,000.00

Computer hardware and software maintenance agreements with Data General, Sun, Tektronix, Calcomp and ESRI; software/hardware training courses; shipping, courier, postage, etc.

Line 400: Supplies 10,000.00

Data cartridges, diskettes, plotter paper, chemicals, toner, cables, tools, diagnostic supplies

Line 500: Equipment 13,000.00

Memory upgrades (Sun and Data General computers); CD-ROM drive (software upgrade releases); CPU upgrade (Data General); disk storage expansion (Data General).

TOTAL 200,000.00

ADNR PORTION OF THIS

STUDY WAS NOT

AVAILABLE AT PRINTING TIME

IDENTIFI__ION OF HABITATS RELEVANT TO INJURED SPECIES

R 96

Justification

A number of species injured by the Exxon Valdez oil spill utilize streams, lakes, riparian habitat or upland habitat under both public and private ownership within the oil spill area. Bald eagles and marbled murrelets nest in mature forests. Salmon, Dolly Varden char and cutthroat trout spawn in coastal streams and rivers while harlequin ducks nest in adjacent riparian vegetation. River otters use mature forest zones for denning and travel corridors.

Some of the habitats important to these injured species could be eliminated by proposed logging or other development. Identifying, prioritizing, and monitoring habitats for these species is an important element of any acquisition program, habitat protection or other restoration activity aimed at these species.

Public pressure to begin an acquisitions program is very high. The Trustee Council directed the executive director to develop a systematic process for a lands/habitat acquisition and protection project. The March 1, 1991 Federal Register notice, 56 FR 8903 identified a five step process for identifying and protecting strategic fish and wildlife habitats and recreation sites. The first step, identification of key upland habitats that are linked to the recovery of injured resources or services by scientific data or other relevant information, is what this project attempts to fulfill.

The injured species habitat identification project will utilize remote sensing and field verification to identify and map habitats within the oil spill area. Specific objectives of the project are:

1. Provide a systematic process for mapping upland resources and evaluating habitat values for injured species.

2. Provide a tool for oil spill area wide comparisons of habitat values for parcels of land regardless of ownership (i.e. could display uniqueness of parcels).

3. Provides the basis for monitoring the effectiveness of restoration options directed toward these species including an acquisition option.

4. Provides the basis for development of management tools for public and private lands to enhance restoration.

5. Allows resource based evaluation or selection of lands considered for acquisition/review.

6. Provides injured species habitat information on critical areas within one year while providing a basis for evaluating all oil spill impacted lands within several years.

Evaluating injured species habitat is a multi-year project. While some areas under immediate threat could be evaluated in 1992, the cost and time required to evaluate all areas considered for acquisition is prohibitive. This project will allow the Trustee Agencies to predict the habitats being considered for acquisition or protection without the expense of having to visit every site. Future work could refine the maps to allow for extremely accurate calculations of resource values.

Budget

Coordination between the Alaska Department of Fish and Game, Forest Service and the US Geological Survey EROS field office are still going on. A detailed budget is not available yet. However a preliminary breakdown is as follows:

Remote Sensing Interpretation

Personnel	$60,000	1 FTE to process existing imagery
Supplies	$65,000	Satellite imagery and air photos
Equipment	0	
Contracts	0	
Travel	0	
Data interpretation integration and analysis	$200,000	
Subtotal	$365,000	

Field work to verify remote sensing work and determine if habitats are within critical areas:

Personnel	$130,000
Travel	$18,200
Contractual	$52,000
Supplies	$13,000
Equipment	$19,500
Sub Total	$232,700
Project Total	$600,000

Study Title: Recovery Monitoring of Hydrocarbon-Contaminated Subtidal Marine Resources

Study ID Number: Restoration Study Number 101

Lead Agencies: NOAA/ADFG/ADEC

Cost of Proposal: $1021 K

Study Dates: March 1, 1992 - February 28, 1993

Project Justification

Recovery rates of subtidal sediments contaminated by petroleum hydrocarbons at the latitude of PWS are poorly known. Complete recovery to background levels of hydrocarbons in subtidal sediments in the Sound is likely to take several years. This study proposes to document hydrocarbon contamination of subtidal sediments (part A), of populations of particular species of fish and invertebrates (part B), and monitor the recovery of shallow subtidal (part C) and deep-water benthic communities (part D). Monitoring subtidal microbiological recovery will also be conducted (part E). Birds and mammals that forage in or come into contact with subtidal sediments will be partially dependent on the recovery of these resources for their own recovery.

Project Statement Summary

Part A. Subtidal Sediments (NOAA). NRDA studies have documented the contamination of subtidal sediments in PWS by the EVOS. We have found that by June 1990 sediments were contaminated at no fewer than 15 study locations within PWS. Sediment contamination had reached a depth of 20 m at 8 or more sites. In or near two heavily contaminated bays, oil was detected in sediments to a depth of 100 m. Between 1989 and 1990, there has appeared to be a tendency for contamination to be spreading from shallow to deeper depths. This study will monitor the recovery of these sediments to baseline levels over time.

Part B. Subtidal Fish Species (NOAA). There has been extensive and continuing exposure of subtidal fish to oil in PWS following the EVOS. Data suggests that oil has spread to deeper areas with time. The rates and extent of natural recovery of demersal fish species needs to be determined. Samples of benthic fish has shown evidence of alterations in reproductive parameters, and some possible evidence of altered histopathology. This project proposes to document the rate and extent of recovery of subtidal fish species from oil exposure. Return to natural biological conditions and health will be documented.

Part C. Shallow Subtidal Benthos (ADFG). The significance of oil impact to shallow subtidal benthos lies in the effects on the food chain: normal food species fed on by fish, otters, etc, may no longer be present in adequate numbers, and hydrocarbon

contamination may be passed to higher trophic level organisms. It is within the shallow areas where such species as sea ducks, sea otters, and river otters forage. This project will continue to monitor the effects of oil and the recovery of the shallow bottom habitat communities in selected areas of PWS.

Part D. Deep Benthic Communities (ADFG). The significance of oil impact to deep benthic communities lies in the effects on the food chain: normal food species fed on by fish, otters, etc, may no longer be present in adequate numbers, and hydrocarbon contaminants may be passed to higher trophic levels. This project will continue to determine the effects of oil on deep benthic communities, and to monitor the progress of recovery. However, the deepest sites, where there was the least evidence of oil effects, will be omitted in 1992 to reduce costs.

Part E. Microbial Recovery (ADEC). Microbial numbers and activity in sediments are good indicators of exposure to hydrocarbon contamination. In addition, these measurements yield information on the mobilization of oil to deeper sediments over time. Microbial activity remained high in 1991 at some sites presumably where relatively fresh oil was still present. Microbial information promises to be useful in linking the other parts of this study together and possibly for prioritizing sediment hydrocarbon samples for analysis.

Budget

Budget for Oil Spill Year 4

ITEM	DETAIL	PROJECT COST	OY4/ FY92	OY4 FY93
SALARIES				
	Principal Investigator: GS-12; 0.25 FTE	19500		
	Research Fish. Biologist: GS-09; 1.0 FTE	42100		
	Research Fish. Biologist: GS-07; 0.21 FTE	6800		
TRAVEL				
	3RT JNU-VALD FIELD WORK $600	1800		
	2RT JNU-ANCH MEETING $500 + $196/D Per Diem, 3d	2064		
	1RT JNU-SEA MEETING $550 + $103/D Per Diem, 3d	859		
CONTRACTS				
	Vessel 14d x 5.0K/d	70000		
	Hydrocarbon analysis 180 samples x $788/sample	141840		
SUPPLIES				
	Bottles, solvents, dive supplies containers	5000		
TOTAL COSTS		289,963		
Percentages		100%		

Detailed Budget Restoration Study 75					
laries					
	Titles	Grades	FTE	Cost	
	Principal Investigator	GM-15	0.1	$7,858	
	Deputy Division Director	GM-14	0.1	$7,098	
	Supv. Res. Chemist	GS-12	0.2	$9,070	
	Zoologist	GS-11	0.2	$6,703	
	Res. Chemist	GM-13	0.2	$11,487	
	Res. Chemist	GS-11	0.2	$8,290	
	Physiologist	GS-11	0.2	$8,290	
	Fish. Biol. (Res.)	GS-11	0.2	$7,563	
	Computer Specialist	GS-7	0.31	$6,791	
	Chemist	GS-9	0.2	$5,360	
	Fishery Biologist	GS-13	0.2	$9,242	
	Fishery Biologist	GS-7	0.2	$4,381	
	Biochemist	GS-7	0.2	$4,381	
	Biotechnician	GS-7	0.2	$4,381	
	Histopathologist	GS-7	0.2	$4,381	
Leave Surcharge				$18,634	
Total Salaries					$123,909
Employee Benefits					$21,932
				total salaries	$145,841
ravel					
RT to Anchorage for sampling @ $750				$3,000	
fare $350/perdiem @ $133)					
RT to Anchorage for meetings @ $900				$2,700	
(airfare $350/perdiem @ $133)					
Total Travel					$5,700
Contracts					
vessel charter, 10 days @ 5K/day					$50,000
Supplies					
Office supplies				$2,500	
Field sampling supplies				$11,000	
chemicals, equipment maintenance and parts				$35,000	
					$46,500
PROJECT TOTAL					$250,041

Injury to Shallow Benthic Communitie

PROJECT LEADER:
Steve Jewitt

PROJECT NO:
R101 - Part C - ADFG

LOCATION:
University of Alaska-Fairbanks

PHONE:
474-7841

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	0.0	0.0	0.0
72000	0.0	0.0	0.0
73000	0.0	0.0	0.0
74000	0.0	0.0	0.0
75000	0.0	0.0	0.0
TOTAL	0.0	0.0	$330,000

This is to be the department's OY4 budget request for the above project.

On the following pages, please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS:

Oil spills have three phases of impact to communities of bottom-dwelling organisms: Phase 1 characterized by a short-term toxic effect in which there is large-scale mortality; Phase 2 is characteri by an invasion of opportunistic organisms that feed on the abundance of dead organic material that resul from Phase 1; Phase 3 is recovery and return to normal. This project began in fall 1989, focussing on si of less than 20m depth. The study sites were in biologically important areas where eelgrass (Zos a) brown algae (Laminaria) predominate. There has been injury or death to the plants within eelgra b affected by oil, a reduction in some shallow-bottom invertebrates, and an increase in scavenger speci Based on experience elsewhere, it can be expected that dead organic material will be consumed by bacte and opportunistic scavenger animals over a period of 3-5 years, during which time, normal communities be expected to reestablish themselves. The significance of oil impact to shallow subtidal communities in the effects on the food chain: normal food species fed on by fish, otters, etc. may no longer be pre in adequate numbers, and hydrocarbon contaminants may be passed to higher level organisms. It is wi the shallow areas where species such as sea ducks, sea otters, and river otters forage. This project continue to monitor the effects of oil and the recovery of the shallow bottom habitat communities selected areas of Prince William Sound. This study compliments the deep benthic study.

Injury to Deep Benthic Communities

PROJECT LEADER:
Howard Feder

PROJECT NO:	LOCATION:	PHONE:
R101 Part D - ADFG	University of Alaska-Fairbanks	474-7956

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	0.0	0.0	0.0
72000	0.0	0.0	0.0
73000	0.0	0.0	0.0
74000	0.0	0.0	0.0
75000	0.0	0.0	0.0
TOTAL	0.0	0.0	$115,000

This is to be the department's OY4 budget request for the above project.

On the following pages, please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS:

Oil spills have three phases of impact to communities of bottom-dwelling organisms: Phase 1 is characterized by a short-term toxic effect in which there is large-scale mortality; Phase 2 is characterized by an invasion of opportunistic organisms that feed on the abundance of dead organic material that resulted from Phase 1; Phase 3 is recovery and return to normal. Because this project did not begin until July 1990, more than a year after the oil spill, Phase 1 had n completed except in certain limited areas. There was, however, considerable evidence that P e 2 was present in 1990 and continued into 1991. Based on experience elsewhere, it can be expected that dead organic material will be consumed by bacteria and opportunistic animals over a period of 3-5 ~~years, during which time,~~ normal communities can be expected to reestablish themselves. The significance of oil impact to deep subtidal communities lies in the effects on the food chain: normal food species fed on by fish, otters, etc. may no longer be present in adequate numbers, and hydrocarbon contaminants may be passed to higher level organisms. This project will continue to determine the effects of oil on deep benthic communities, and to monitor the progress of recovery. However, the deepest sites, where there was the least evidence of oil effects, will be omitted in 1992 to reduce costs. This project compliments the shallow benthic project.

PROPOSED BUDGET
Subtidal Study Number 101
(Microbiology)
1 March 1992 - 28 February 1993

	REQUESTED FUNDS
A. SALARIES/WAGES	
1. Principal Investigator	$ 7,000
2. Technician	$12,000
B. TRAVEL	$1,500
C. SERVICES Photocopying, Communications, Graphics	$ 300
D. SUPPLIES	$ 7,200
E. EQUIPMENT	0
F. TOTAL DIRECT COSTS	$30,000
** G. OVERHEAD 20% of Total Direct Costs	$6,000
TOTAL COSTS	$36,000

** Less amount reserved by the University of Alaska Fairbanks for claim through the CERCLA process (Comprehensive Environmental Response, Compensation and Liability Act of 1980) ($9,000)

COASTAL HABITAT NATURAL RECOVERY MONITORING
R102

Justification

The intertidal zone was the most severely contaminated habitat within the oil spill area. Recovery in the supratidal is progressing. However, recovery in the one and two meter drop of the intertidal zone is still retarded. Natural populations of intertidal organisms were significantly reduced along heavily oiled shorelines throughout the oil impact region. Densities of intertidal algae (Fucus), barnacles, limpets, amphipods, isopods, and marine worms were decreased. Although there were increased densities of mussels in oiled areas in 1990, they were significantly smaller than mussels in the unoiled areas and the total biomass of mussels was significantly lower. In 1991, mussel densities and biomass were both greater at control sites than oiled sites. Petroleum hydrocarbon accumulation in filter feeding mussels experimentally placed in oiled areas indicate that oil remains available for uptake by other organisms. In both 1990 and 1991, oiled surfaces retarded settlement by juvenile barnacles when compared to unoiled sites.

Fucus, the dominant intertidal plant, was severely affected by the oil and subsequent cleanup activities. In 1991, Fucus densities continued to be depressed at oiled sites, probably due to the poor dispersal capability of this alga. The percentage of intertidal areas covered by Fucus was reduced following the spill and opportunistic plant species which characteristically flourish in disturbed areas were increased. In 1991, most algal species showed adverse affects of the oil spill, with only one species being more abundant at oiled sites than control sites. The average size of Fucus was reduced, the number of reproductive sized plants greatly decreased, and the remaining plants of reproductive size decreased in reproductive potential due to fewer fertile receptacles per plant. There was also reduced recruitment of Fucus at oiled sites.

Many injured species utilize the intertidal zone including harlequin ducks, pigeon guillemots, black oystercatchers, sea otters and river otters. Monitoring the natural recovery of the intertidal zone is an important component of determining when recovery of these species and the overall ecosystem has returned to baseline conditions. Permanent stations set up in Prince William Sound will monitor the recovery of the dominant intertidal plant, Fucus, as well as barnacles, mussels, and other organisms important to the recovery of the ecosystem.

The coastal habitat monitoring project is a logical progression from the NRDA studies. Injury has been determined, now it is important to determine when recovery has occurred. The techniques and methodologies for studying the intertidal organisms are well established.

Restoration monitoring was initiated in 1991, prior to the completion of the NRDA studies. Failure to continue a monitoring program in 1992 will make it difficult to determine the rate and extent of natural recovery. Discontinuity may also result in the loss of trained personnel and permanent study sites resulting in increased costs and reduced reliability of the data in outyears.

Budget: Details of the budget will be worked out at a synthesis meeting scheduled for February 17 and 18, 1992. The proposed budget for monitoring the entire oil spill area intertidal area is $700,000.

Study Title: Recovery Monitoring of Intertidal Oiled Mussel Beds in Prince William Sound and the Gulf of Alaska Impacted by the Exxon Valdez Oil Spill

Study ID Number:	Restoration Number 103
Principal Investigator:	Stanley D. Rice Malin M. Babcock Patricia Rounds
Lead Agency:	NOAA/NMFS/Auke Bay Laboratory
Other Agencies:	ADEC, ADNR, ADF&G, USFWS, NPS
Cost of Proposal:	750 K
Study Dates:	March 1, 1992 - February 28, 1993

Project Summary

This project will survey the geographic extent of contaminated mussels beds by sampling mussels, byssal thread mats, and underlying or adjacent sediments; and analyzing for petroleum hydrocarbons. This project consists of extensive field sampling, determination of biological impact on mussels and hydrocarbon analyses. Preliminary identification of potential sites will be provided by ADEC.

We also propose to evaluate the recovery of mussels in oiled mussel beds with and without treatments.

Project Justification

High oiled concentrations in mussels and the underlying materials in oiled beds were found in 1991. This provided a possible link (cause) for continued reproductive failure of harlequin ducks in the western PWS, damage to oystercatchers, and higher than normal mortalities of juvenile otters. This study proposes to determine the geographical extent of oiled mussel beds, the intensity of oil remaining in mussels and the underlying organic mat. This study will provide data to assess the possible linkage of oiled mussel beds with continued damage to harlequin ducks, oystercatchers, and juvenile otters. The recovery of these oiled beds with some mechanical treatment and without treatment will be followed.

Budget 750 K

"HYDROCARBON ANALYTICAL SUPPORT SERVICES AND ANALYSIS OF DISTRIBUTION AND WEATHERING OF SPILLED OIL"

TECHNICAL SERVICES #1

Project Justification

Technical Services #1 coordinates the analysis of samples for petroleum hydrocarbons and archives the resultant data and information in order to develop a single, integrated coordinated data set for the NRDA.

Technical Services #1 also developed and manages an analytical Quality Assurance (QA) program which ensures that the analytical data are of defensible quality and complies with the NRDA regulations.

Project Statement Summary

In order to document the exposure of natural resources to oil spilled by the EXXON VALDEZ, NRDA projects collected samples of these resources to be analyzed for petroleum hydrocarbons. The data from the analysis of these samples define the exposure of that resource to spilled oil, indicate the possible effects of the oil on the resource, and provide information on the subsurface transportation and residence time of the oil. These uses require that the analytical data be accurate, precise and comparable across projects and throughout the time of the NRDA process.

Technical Services #1, a cooperative project between NOAA and F&WS coordinates the chemical analysis of all samples collected by the NRDA studies in order to develop a single set of analytical data from the EXXON VALDEZ NRDA. This dataset is made up of data and information from all the NRDA projects, supports all the NRDA projects and allows the synthesis of the individual project data and information into major interpretative products. The methods used to attain this goal include: 1) the development of a sample collection manual and the training of personnel in its use; 2) the development and implementation of Quality Assurance programs for the measurement of petroleum hydrocarbons and bile metabolites and 3) the development and implementation of electronic systems for a) sample inventory and tracking and b) the archival, manipulation and retrieval of the analytical data.

NOAA coordinates the analysis of those samples from federal or state studies involving water, sediment, fish, shellfish and marine mammals (except sea otters); F&WS is responsible for those samples from studies involving birds, sea otters, and terrestrial mammals.

NOAA also bears sole responsibility for the QA programs and the sample inventory and analytical results databases.

The NRDA projects have collected over 38,000 samples; 30,070 are samples from NOAA trustee resources; the remainder are from F&WS trustee resources. The majority of the samples (24,000) were collected during the 1989 field season; the numbers have declined with each subsequent field season. Most of the samples are archived under chain of custody at NOAA/NMFS ABL. The remainder are archived at NOAA/NMFS NWFC, F&WS Anchorage and ADF&G Fairbanks.

The samples are subjected to a variety of analysis depending upon the type of sample; e.g. bile, sediment or tissue; and the information sought. For example sediment samples may be analyzed by GC/MS if individual component data are required or by UVF if a relative concentration of total aromatic compounds is sufficient. There is a significant difference in cost between the two types of analysis. In both cases, however, the sample will be analyzed for grain size and total organic carbon - which parameters allow the values to be normalized across samples.

Not all of the samples collected will be analyzed. Initially there was some confusion as to what was an appropriate sample and how to collect, ship and document the samples. Also, because the oil spill was a unique event, a conscious decision was made to oversample. This means that many of the samples collected are irrelevant, inappropriately collected or documented, broken or redundant. Over 7,000 samples from the 1989, 1990 and 1991 field seasons have been analyzed. The majority (5,000 of all types) were analyzed by GERG; smaller sample sets were analyzed by NOAA/NMFS ABL (697 water, mussel and sediment samples, the majority of which make up the dataset for AirWater #3) and NOAA/NMFS NWFC (1,200 bile samples, the majority of which make up the dataset for Fish/Shellfish #24). All of these data have been examined for reasonableness, undergone a preliminary interpretation and returned to Project Leaders. Approximately 1000 samples - the majority from the 1992 field season - remain to be analyzed.

The analytical Quality Assurance program was developed to assist the analytical facilities in making the best measurements possible and to demonstrate (document) the quality of the resultant data. Data quality is defined by accuracy ("Are the data within the required tolerances?") and precision ("Are the data consistent over time?"). The NRDA projects add a third definition - "Are the data comparable between the various analytical laboratories?". The use of field and analytical blanks and calibration, reference and control materials provided by the National Institute of Standards and Technology (NIST) and the reporting and archiving of these data goals. The analysis of these materials and the subsequent archival of the data with the associated sample analytical data both demonstrates the quality of these measurements and allows the determination of the associated uncertainties.

Two laboratories (GERG and ABL) are analyzing samples for petroleum hydrocarbons. Data from the QA program indicate that the analytical values being reported by both laboratories are: accurate to within +/- 25% and more typically to within +/- 15% and precise within +/- 2 standard deviations of the mean.

Two laboratories (GERG and ECD) are analyzing samples for metabolites of petroleum hydrocarbons. This is a semi-quantitative assay for which there were no available standards and calibration materials, such as those provided by National Institute of Standards and Technology (NIST) for the measurement of petroleum hydrocarbons, prior to the initiation of this program. These materials were developed, provided to the participating laboratories and their use required. The resultant data indicated that the laboratories are providing data accurate to within +/- 11%. The precision is also good, within +/- 1 standard deviation of the mean for the majority of the analysis with a relative (%) standard deviation of 9% and 5% at phenanthrene and naphthalene wavelengths, respectively.

All sample inventory and tracking information; analytical and supporting QC data and calculated summaries and indices are archived electronically at NOAA/NMFS ABL. All data upon receipt from the analytical laboratory are subject to a brief scan for reasonableness, interpreted generally as to the presence or absence of petroleum and forwarded to the Project Leaders as hard copy. Because of the size of some of the project datasets, AirWater #2 and #3 for example, data are being provided to these Project Leaders in electronic format as well as hard copy. Data can be provided to all Project Leaders in electronic format if so requested; to date, requests have been few.

BUDGET: NOAA

100	SALARIES		TOTAL
	1 Principle Investigator, GS-14	0.75 FTE	$ 45,050
	1 Sample/Database Custodian, GS-11	0.6 FTE	42,432
	1 Fishmarker, GS-5 (temp)	0.1 FTE	3,000
300	CONTRACTS		
	Transport (samples Juneau to Seattle/Texas)		1,500
	Sample Analysis		
	Texas A&M		300,000
	NOAA/NMFS ABL		225,000
	NOAA/NMFS NWFC		175,000
	QA - Bile Metabolites		7,500
500	SUPPLIES		
	Computer Hard/Software		500
		NOAA PROJECT TOTAL	$799,982

BUDGET: USFWS

100	SALARIES		TOTAL
	1 Principle Investigator, GS-12	1 FTE	$ 54,000
300	CONTRACTS		
	Transport (samples Juneau to Seattle/Texas)		1,000
	Sample Analysis		
	Texas A&M		95,000
		USFWS PROJECT TOTAL	$150,000
		TOTAL COST	$949,982

PROJECT: TECHNICAL SERVICES 3 - GIS MAPPING AND ANALYSIS OF DAMAGE ASSESSMENT DATA

AGENCY: DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE

LINE ITEM	COST
Salary [GS 12 - 1 FTE GS 11 - .75 FTE]	100,000.00
Travel	0.00
Contracts	0.00
Supplies	0.00
Equipment	0.00
TOTAL	100,000.00

BACKGROUND/JUSTIFICATION: During 1989 and 1990 this study focused on the acquisition, development and distribution of the centralized NRDA database. This information was incorporated into two basic themes: primary which includes shoreline oiling, shoreline treatment, coastal morphology, bathymetry, hydrography, wildlife habitat, land status, and land cover; and thematic which includes hydrocarbon information, and wildlife distribution and abundance data. In 1991, the study focus shifted toward analytical services through the integration of primary and thematic layers. Examples of products for NRDA data synthesis include distribution of results in a comprehensive manner, relating various themes simultaneously, calculating proximity of one or more themes, and predictive and interpretive modeling of unsampled areas.

This project will support Sea Otters, Boat Surveys, Murres, Bald Eagles, Marbled Murrelets and other FWS NRDA studies that have outstanding GIS components to their data analysis. This information will provide necessary data analysis for the preparation of final reports. The preparation of final reports will be essential for understanding the injuries the spill caused to birds and otters. If this information is not clearly and completely available to those responsible for restoration, it will not be possible to adequately address the restoration needs of the resource.

Approximately $387,000 will have been spent on GIS technical support of NRDA studies through 1992. Reduction in the amount of funds provided for close-out activities would result in a lack of ability to complete the final analysis of the effects of the EVOS on sea otters and bird species and provide the public with the results of the government's investment.

MEMORANDUM
Department of Natural Resources

STATE OF ALASKA
Division of Management

To: Marty Rutherford, Designee
Resource Restoration Coordination
Council for Exxon Valdez
Oil Spill

Date: Jan 27, 1991

File No: 8-270-16

Telephone No: 762-2384

From: Dianne M. Lyles, Chief
Land Records Information
Section

Subject: Oil Year Four
Budget, TS3/DNR

We have had the opportunity to review available information concerning Geographic Information System (GIS) mapping and analysis support to Damage Assessment close-out and Restoration needs. We have also used the target figure of $400.0 for purposes of estimating the maximum project capacity we could support for the twelve month period 3/1/92 through 2/28/93. Additionally we have met with the USF&WS staff who are currently a part of Technical Services Study #3.

ASSUMPTIONS

- In meetings with USF&WS TS3 staff, they have indicated that their GIS budget for oil year four is built to support only USF&WS projects. Although this has basically been the case in the past, it is now a clear delineation. The budget we are submitting is aimed at supporting the broad needs of the collective federal and state agencies represented by the NRDA Management Team and the Restoration Planning Team.

- Effective 3/1/92, we will be separating our project costs into three categories for purposes of tracking the costs against different revenue (appropriation) sources. The work we are assigned by the GIS Review Committee will be charged to the attached budget. Work strictly in support of Department of Law discovery needs will be expensed under an RSA between DNR/LRIS and Law. Work in support of the third party litigant MOU with the feds and the state will be charged direct to the third party representatives, probably through the Department of Law.

- Indirect charges to the Division of Management, normally included in our budget submittal, have not been considered, as per instructions from Nico Bus.

- The current RSA will be closed out effective 2/28/92. We

will be operating on a new RSA effective 3/1/92. We are also assuming that we will close out that RSA 6/30/92, and begin another RSA effective 7/1/92.

* We are assuming that the projected twelve month budget of $400.0 is an amount we can generally count on. Because our staff is specialized in this technical field of support, as much lead time for future budget adjustments would be appreciated.

OIL YEAR FOUR BUDGET

Period	*3/1 - 6/30/92*	*7/1 - 2/28/93*	*TOTAL*
100 Personnel	$90.0	$200.0	$290.0
200 Travel	0.0	3.0	3.0
300 Contractual	10.0	42.0	52.0
400 Supplies	5.0	30.0	35.0
500 Equipment	0.0	20.0	20.0
TOTAL	$105.0	$295.0	$400.0

PERSONNEL

Personnel costs are in support of project management, system management, two senior analysts, two college interns, a data processing clerk, and a half-time clerk typist.

Project management work is that work performed directly by Richard McMahon, the project manager, and me, the Section Chief. Our work includes attending meetings with involved principles and directing the work of staff on what is a very complex project. The system manager keeps all of the computer equipment operating, loads and supports all necessary software, and manages the database where the damage assessment and restoration information is housed. Not charged are those LRIS Section efforts necessary to manage the maintenance contracts for the hardware and software, local expense tracking to manage those obligated funds not yet reflected in AKSAS, and efforts in support of budgeting analysis. Rates charged to the project are as follows: Dianne M. Lyles, Section Chief, 15% of time; Richard McMahon, Project Manager, 35% of time; Jim Jurgens, system manager, 35% of time. It will not be possible for LRIS to bid this project if these direct 'overhead' costs cannot be funded.

TRAVEL

Minimal travel expenses are related to Juneau/Anchorage trips, and travel in support of technical training.

CONTRACTUAL

Contractual monies are in support of necessary software and hardware maintenance.

SUPPLIES

Supply expenses are related to plotter paper and chemicals, and office and graphic supplies.

EQUIPMENT

As damage assessment work is brought to a close, and as new data is assimilated associated with restoration needs, we will have to purchase minimal disk drive capacity to house this database in its entirety.

BUDGET DISCUSSION

As you can see, we have moved most of our line item budget request into the period 7/1/92 through 2/28/93. This decision was taken because the lead time for the adjusted budget amount, effective 3/1/92, was very short, and we will need maximum line-item budget dollars to support project needs in the first eight months of SFY93. We have also projected a maximum staffing configuration given our target budget figure.

PROJECT DELIVERABLES

I have attached a copy of our most recent detailed study plan, dated November 20, 1991. Besides providing an excellent overview of our recent project accomplishments, projected work details are listed beginning on page nineteen of the report.

Additionally, new work has been executed since this report was issued. We have copied Dave Gibbons on all work transmittal documents, and will continue to do so, in addition to adding your name to our 'cc list for this type of work tracking. We believe

that there is good opportunity for both the damage assessment close-out work and the restoration projects to benefit from the mapping and analysis of the information themes of interest to the Resource Restoration Coordination Council. There is also a likelihood that work we are currently undertaking for the department's land selections project may directly, or indirectly, benefit some land acquisition ideas we have heard expressed in the restoration arena.

We appreciate this opportunity to provide you with information concerning our project. I am available for any questions you may have.

Attachments: Oil Year Four Budget Documents

Exxon Valdez Oil Spill, Technical Services #3, GIS Mapping and Statistical Analysis, Detailed Study Plan, November 20, 1991, (only on Marty copy).

cc: Sharon L. Barton, Management
Nico Bus, Management
Dick Lefebvre, Land
Richard McMahon, Management

PRO[illegible]: Technical Services #3	PROJECT LEADER: Dianne Lyles, Alaska Dep[illegible] Natural Resc[illegible] t of s
PROJECT NO: GIS Mapping and Analysis, Damage Assessment Closeout and Restoration Mapping and Analysis	LOCATION: 3601 C St, Ste 916 Anchorage, AK / PHONE: 762-2384

LINE ITEM	3/1/92-6/30/92	REQUEST 7/1/92-2/28/93	Oil Year 4
	4 MONTHS	8 MONTHS	12 MONTHS
71000	90.0	200.0	290.0
72000	0.0	3.0	3.0
73000	10.0	42.0	52.0
74000	5.0	30.0	35.0
75000	0.0	20.0	20.0
TOTAL	105.0	295.0	400.0

This is to be the department's OY4 budget request for the above project. On the following pages, please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS:

SEE ATTACHED

...ADDITIONAL SERVICES - LIST POSITIONS (AMOUNT WILL BE CALCULATED FOR YOU)

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	12 MONTHS	COST	LOCATION	INCUMBENT	SUPERVISOR
10-0392	19B	Analyst/Programmer IV	12 mos	$66.0	Anchorage	D. Mortenson	R. McMahon
10-0393	8C	Clerk Typist III	8 mos	$22.0	Anchorage	R. Graham	D. Mortenson
10-0379	17B	Analyst/Programmer III	12 mos	$62.0	Anchorage	J. Davis	D. Mortenson
10-0391	8B	Data Processing Clerk I	12 mos	$33.0	Anchorage	M. Ling	D. Mortenson
NP 02B010	$12.50 per hr.	Student Intern II	8 mos	$22.0	Anchorage	H. Buchholdt	D. Mortenson
NP 02B020	$10.00 per hr.	Student Intern II	4 mos	$10.0	Anchorage	N. VanVeldhuisen	D. Mortenson
* 10-0377	23J	Data Processing Mgr III	1.8 mos	$14.5	Anchorage	D. Lyles	S. Barton
* 10-0387	20D	Natural Resource Mgr II	4 mos	$26.0	Anchorage	R. McMahon	D. Lyles
* 10-0381	19J	Analyst/Programmer IV	4 mos	$26.0	Anchorage	J. Jurgens	R. McMahon
Overtime for off-hours system support				$8.5			
		* Existing DNR PCN's.					

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel				
72270 Administrative Travel	Juneau X2-ADF&G, Budget; California (Sun Microsystems) X1-System Training	0	3.0	3.0
72300 Conventions and Meeting Travel				
72360 Moving or Relocation Expense				
72500 Per Diem				
	SUBTOTAL	0	3.0	3.0

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services	2 Software Classes, 1 Hardware Class	.5	1.5	2.0
73300 Communication	Tie Lines, GCI, Executone, Contel	.5	1.0	1.5
73400 Transportation	Shipping, Courier, Postage	.5	1.0	1.5
73420 Trans-State Equip Fleet Fees				
73500 Advertising, Printing & Binding	Specialty Document Reproduction, Copier Charges	.5	1.0	1.5
73600 Public Utilities Services	Phones, Data Communications	.5	1.0	1.5
73700 Minor Repair & Maintenance	SUN Hardware, ESRI Software, Versatec Hardware, & Misc.	7.5	36.5	44.0
73800 Rental-Land, Buildings & Space				
73860 Rental-Machinery & Equipment				
73900 Other Expenditures & Services				
	SUBTOTAL	10.0	42.0	52.0

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74220 Office & Library Supplies	Documentation, Office Supplies, Graphics & Shipping Materials	2.0	4.0	6.0
74520 Professional & Scientific Supplies				
74560 Data Processing Supplies	Plotter Paper, Chemicals, Toner, Data Cartridges, Diskettes	1.5	23.5	25.0
74600 Other Operating Supplies				
74650 Repair & Maintenance Supplies	Tools, Cables, Diagnostic Supplies	1.5	2.5	4.0
OTHER				
OTHER				
OTHER				
OTHER				
	SUBTOTAL	5.0	30.0	35.0

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip				
75790 Communication Equipment				
75830 Data Processing Equipment	Disk-Storage Expansion for Database Database Backup System (Security Enhancement)	0	20.0	20.0
75870 Laboratory & Scientific Equip				
75940 Special Equipment				
76050 Furniture & Office Equipment				
OTHER				
OTHER				
OTHER				
	SUBTOTAL	0	20.0	20.0

27 January 1992

SUBTIDAL STUDY NUMBER 4
FATE AND TOXICITY OF SPILLED OIL FROM THE EXXON VALDEZ

Project Leader: Douglas A. Wolfe
National Oceanic & Atmospheric Administration
Office of Ocean Resources Conservation & Assessment
N/ORCA22; Room 323 Bldg. WSC-1
6001 Executive Blvd.
Rockville MD 20852
(301) 443-8933

JUSTIFICATION AND DETAILED BUDGET

Project Summary:

This study, originally called Air/Water Project number 6, was designed and undertaken by NOAA in 1990 at the request of the NRDA Trustee Council, in response to specific recommendations from the Department of Justice's Peer Reviewers. The study was designed to: a) determine the toxicity of oiled environmental samples, using standard toxicity tests; b) examine the extent to which any observed toxicity may be attributed to oxygenated, polar products in weathered oil (versus the parent hydrocarbons found in fresh crude); and c) promote the synthesis of data and information (generated largely by other projects) on the geographic distribution, weathering, and potential effects of petroleum on living marine resources. Toxicity testing has been conducted on sediment samples taken both inside and outside of Prince William Sound (PWS) in 1989, 1990 and 1991. Petroleum hydrocarbon concentrations were estimated by ultraviolet fluorescence spectroscopy on the sediment samples collected in 1989 and 1990. Between 1989 and 1991, oil concentrations declined in intertidal sediments sampled at most oiled locations, while the concentrations in shallow subtidal sediments (3-20 meters) remained about the same or in some cases, rose slightly. Patterns of sediment toxicity to test organisms (marine amphipods and larval bivalve molluscs) reflected similar patterns. In 1990, significant toxicity was associated only with intertidal sediment samples from heavily oiled sites, but in 1991, toxicity was associated primarily with sediment samples from the shallow subtidal zone. The toxicity of sediments from oiled sites was generally greater than that from unoiled reference sites in both 1990 and 1991. Smaller differences between oiled and reference sites were found in 1991. Final interpretation of sediment toxicity will require data on hydrocarbon chemistry and grain

size of the sediments (expected from Technical Services Project number 1). These analytical data are now available for 1989 and 1990, but have not yet been analyzed in detail; data for 1991 are not yet available.

Contracts were let to study the extent to which any toxicity present in oiled sediments and interstitial waters may be attributed to polar oxidation products (as opposed to parent hydrocarbons) in petroleum. Intertidal sediments and interstitial waters from oiled and reference sites in Prince William Sound were extracted and separated into polar and nonpolar fractions, and the fractions were tested for relative toxicity. Polar fractions from the most heavily oiled site exhibited toxicity similar to that associated with the nonpolar fractions, but this toxicity was detectable only at very high concentrations. A draft final report on these tests is expected in March 1992. Under a separate contract, extracts of mussel tissues from oiled and unoiled sites were chemically fractionated into nonpolar and polar constituents and analyzed by ultraviolet fluorescence spectroscopy. Polar constituents occurred in mussel tissues from oiled sites at levels that were proportional to (or less than proportional to) the amounts present in the original parent oil simultaneously accumulated in the tissues. These analyses have verified that toxicity associated with oiled sediments may arise in part from polar constituents and/or metabolites; however the toxicity levels associated with polar and nonpolar constituents were generally similar for all of the endpoints tested.

Relevant literature and data have been identified and assembled for the petroleum budget (objective c above), and a synthesis workshop still is recommended as an important step in completing this synthesis task.

Project Justification:

Sediment toxicity is a valuable measure of the persistence of effects from the spill. Results to date suggest that oil-associated toxicity has migrated from the intertidal zone into shallow subtidal areas. Samples from ten sites within PWS will be tested for toxicity in 1992 to determine how toxicity is persisting and shifting with depth in the sound. It is recommended that sediment toxicity bioassays be retained through OY4 as one of the tools for monitoring the progress of recovery at oil-impacted sites. No other new field work is proposed under this project, and a final report will be prepared at the end of the year on all aspects of the project. The synthesis and integration of data and information of the fate of the spilled oil through time will provide essential context for the interpretation of initial injury to, and subsequent recovery from, the spill.

Detailed Budget:
(National Oceanic and Atmospheric Administration)

	Toxicity Testing	Oilfates Budget	Final Reporting
Salaries[a]	$ 8	$14	$10
Travel	1.5[b]	15[c]	–
Contracts	105[d]	4[e]	–
Supplies	2.5[f]	–	–
Equipment	–	–	–
	$117K	$ 33K	$10K

TOTAL: $160K

Explanatory notes:

[a]Four months GS-15 salary @ $96,900 (salary plus benefits).
[b]One trip Rockville MD to Anchorage AK @$700 airfare + $800 subsistence.
[c]-One trip Rockville MD to Seattle WA and Juneau AK @$700 airfare + $800 subsistence (information gathering for oilfates budget).
-One trip Rockville MD to Anchorage AK @$700 airfare + $800 subsistence (information gathering for oilfates budget).
-Twelve trips various locations to Seattle WA @$500 airfare + $500 subsistence (Estimated travel costs for invited workshop participants)..
[d]Estimated contract costs ($50K) for shipping samples from Valdez, AK to Seattle WA, performing toxicity bioassays on samples from 4 depths at each of 10 sites, and preparation of data report; and $50K for vessel charter.
[e]Estimated support costs for oilfates workshop, including facilities rental and contract support personnel.
[f]Sampling and shipping containers for sediment toxicity samples.

PROJECT: Total budget Injury to Spot Shrimp PROJECT LEADER: Charlie Trowbridge

PROJECT NO: Subtidal Study # 5 LOCATION: Cordova PHONE: 424-3212

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	13.5	47.0	60.5
72000	0.5	2.1	2.6
73000	0.8	12.4	13.2
74000	0.5	2.7	3.2
75000	0.3	1.0	1.1
TOTAL	15.6	65.2	80.6

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS: This is the total of both the "regular" stuff and the biometric support.
Page 1 is the total budget
Pages 2-5 are the original 1-4
Page 6 is the biometric support page

PROJECT: Biometric Support for ST5 ASSESSMENT PROJECT LEADER: Brannian

PROJECT NO: ST 5 LOCATION: Anchorage PHONE: 267-2118

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	6.4	12.3	18.7
72000	0.0	0.8	0.8
73000	0.2	0.4	0.6
74000	0.0	0.1	0.1
75000	0.1	0.3	0.4
TOTAL	6.7	13.9	20.6

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Page 5 is an example, by line item, of the type of information needed.

COMMENTS:

Includes 4.1 mm Biometrician I time. This position plays a major role in developing operation plans, data analysis, and reporting.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	4 MO	8 MO	LOCATION	INCUMBENT	SUPERVISOR
7085	17B	Biometrician I	1.4	2.7	Anchorage	Vinging	Brannian

FULL TIME EQUIVALENTS – FTEs (Months/12): 0.34

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel	2 Trip Cordova	0.0	0.5	0.5
72270 Administrative Travel		0.0	0.0	0.0
72300 Conventions/Meeting Travel		0.0	0.0	0.0
72360 Moving/Relocation Expenses		0.0	0.0	0.0
72500 Per Diem		0.0	0.3	0.3
		0.0	0.0	0.0
	SUBTOTAL	0.0	0.8	0.8

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services		0.0	0.0	0.0
73300 Communication	Telephone; Data Line; Postage	0.0	0.0	0.0
73400 Transportation	Air Charter; Air Freight	0.0	0.0	0.0
73420 Trans–State Equip Fleet Fees		0.0	0.0	0.0
73500 Advertising, Printing, Binding	Visual Aid Preparation; Special Printing	0.0	0.0	0.0
73600 Public Utilities Services		0.0	0.0	0.0
73700 Minor Repair/Maintenance		0.0	0.0	0.0
73800 Rental–Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental–Machinery/Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services	Literature Search	0.0	0.0	0.0
		0.0	0.0	0.0
	SUBTOTAL	0.2	0.4	40.4

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies		0.0	0.0	0.0
74520 Professional/Scientific Supplies	Scientific Reference Material	0.0	0.0	0.0
74560 Data Processing Supplies	Computer Paper; ribbons, etc.	0.0	0.0	0.0
74600 Other operating Supplies	Software	0.0	0.0	0.0
74650 Repair & Maintenance Supplies	Computer Repair	0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.0	0.1	0.1

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment	Microcomputer Parts	0.0	0.0	0.0
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment	File Cabinets	0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.1	0.3	0.4

PROJECT: Injury to Spot Shrimp PROJECT LEADER: Charlie Trowbridge

PROJECT NO: Subtidal Study # 5 LOCATION: Cordova PHONE: 424-3212

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	7.1	34.7	41.8
72000	0.5	1.3	1.8
73000	0.6	12.0	12.6
74000	0.5	2.6	3.1
75000	0.2	0.7	0.7
TOTAL	8.9	51.3	60.0

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Page 5 is an example, by line item, of the type of information needed.

COMMENTS: Implementation of this project is tenuous and relies upon documentation of the continuing presence of injury. Failing this, the project will close out with a budget of 20 K. If fielded, the project will be conducted in November of 1992. Sampling will be conducted at eight locations with objectives with objectives including relative abundance by weight, number and sex of spot shrimp, comparison of size and age frequencies of spot shrimp between sites analysis of fecundity, egg mortality and documentation of injury to tissues. Additionally, the project will entail the documenting the confounding effects of prespill commercial fishing, particularly in areas impacted by the oil spill and evaluate the feasibility of incorporating these effects into abundance estimations.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	MOS	LOCATION	INCUMBENT	SUPERVISOR
11-1970	16B	Fisheries Biologist II	3	Cordova	Trowbridge	Kimker
11-1649	14C	Fisheries Biologist I	1	"	Johnson	Trowbridge
11-N207	9A	Fisheries Technician II	2	"	Kinzer	Trowbridge
New	9A	Fisheries Technician II	3	"		Trowbridge
11-1346	14C	Fisheries Biologist I	1.5	"	Urban	Trowbridge
			0			
			0			
			0			
			0			
			0			
			0			
			0			
			0			
			0			
			0			
			0			
			0			
			0			

FULL TIME EQUIVALENTS - FTEs (Months/12): 0.875

72000 TF	DESCRIPT	4 MOS	8 MOS	12 MOS
72240 Field Travel		0	0	0
72270 Administrative Travel		0	0	0
72300 Conventions/Meeting Travel	4 Trips; Cordova/Anchorage	0.2	0.6	0.8
72360 Moving/Relocation Expenses		0	0	0
72500 Per Diem	10 days	0.3	0.7	1
		0	0	0
	SUBTOTAL	0.5	1.3	1.8

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services		0	0	0
73300 Communication	postage; phones; air freight	0.5	1	1.5
73400 Transportation	vessel charter, 10 days	0	10	10
73420 Trans–State Equip Fleet Fees	truck	0	0.6	0.6
73500 Advertising, Printing, Binding		0	0	0
73600 Public Utilities Services		0	0	0
73700 Minor Repair/Maintenance	copier and computer	0.1	0.4	0.5
73800 Rental–Land/Buildings/Machinery		0	0	0
73860 Rental–Machinery/Equipment		0	0	0
73900 Other Expenditures & Services		0	0	0
		0	0	0
	SUBTOTAL	0.6	12	12.6

74000 ...PLIES	DESCRI ...N	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies	pens, pencils, copier paper	0.2	0.3	0.5
74520 Professional/Scientific Supplies	nalgene bottles	0.1	0.4	0.5
74560 Data Processing Supplies	diskettes, tapes, cables	0.2	0.4	0.6
74600 Other operating Supplies	gloves, raingear	0	0	0
74650 Repair & Maintenance Supplies		0	0	0
Sampling Supplies	Bait, lines, pots, buoys	0	1.5	1.5
OTHER		0	0	0
OTHER		0	0	0
	SUBTOTAL	0.5	2.6	3.1

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0	0	0
75790 Communication Equipment		0	0	0
75830 Data Processing Equipment	hardware; software upgrades	0.2	0.5	0.7
75870 Laboratory & Scientific Equip		0	0	0
75940 Special Equipment		0	0	0
75050 Furniture & Office Equipment		0	0	0
OTHER		0	0	0
OTHER		0	0	0
OTHER		0	0	0
	SUBTOTAL	0.2	0.5	0.7

Study Title:	**Mussel Tissue and Sediment Hydrocarbon Data Synthesis**
Study ID Number:	**Subtidal Study Number 8**
Project Leader:	**Jeffrey W. Short** **Stanley D. Rice**
Lead Agency:	**NOAA/NMFS/Auke Bay Laboratory**
Cost of Proposal:	**175K**
Study Dates:	**March 1 1992 - February 28 1993**

Project Summary

The primary goals of project Subtidal Study #8 are to evaluate the internal consistency of sediment and mussel tissue sample hydrocarbon data, to objectively identify the presence of Exxon Valdez petroleum hydrocarbons in these samples, and to provide a unified interpretation of these results across the constituent projects.

Inconsistent hydrocarbon data are identified using computer-based statistical methods to identify groups of samples that are clearly biased systematically, or that have been clearly exposed to extraneous contamination unrelated to the oil spill. Computer- based methods are necessary because thousands of sediment and mussel tissue samples have been analyzed for 63 independent analytes each. However, these methods are also very powerful just because of the large number of samples involved. Once identified, these samples may be excluded from subsequent statistical tests, which may greatly enhance the power of these tests.

The presence of Exxon Valdez petroleum hydrocarbons in analyzed samples is objectively determined using a computer-based pattern recognition method called principal component analysis (PCA). This method provides an objective and consistent way of determining the presence and intensity of petroleum hydrocarbons in the samples, and works particularly well with NRDA Exxon Valdez oil spill samples because the oil spill is by far the major source of hydrocarbons found in Prince William Sound after March, 1989. Simply stated, the PCA looks for the contamination pattern characteristic of heavily contaminated samples in less contaminated samples, where the pattern may be obscured by confounding hydrocarbons from other sources.

Once Exxon Valdez petroleum hydrocarbons have been objectively and reliably identified in samples, the results can be mapped to yield a picture of the overall extent of contamination. By including results from all the projects that collected sediment

or mussel tissue samples, the most complete and detailed maps of contamination will be prepared, providing a common reference for the participating projects. This, in turn, will provide scientific investigators and the general public with the most accurate indication of the geographic extent and temporal persistence of sediments and of mussels contaminated by the Exxon Valdez oil spill.

Project Justification

The goals of project Subtidal Study #8 are (1) to evaluate the internal consistency of sediment and mussel tissue hydrocarbon data, and (2) to interpret these results. The first goal is necessary to minimize the effects of errors in sample collection, documentation, and analysis that are inevitable with a large number of samples collected for several different projects, and that are chemically analyzed using a complex procedure: the more of these errors that can be objectively identified, the greater will be the power of subsequent statistical tests. The second goal is necessary to provide an objective evaluation of the geographic extent and temporal persistence of petroleum hydrocarbon contamination of these samples. This overall evaluation will provide a common reference for each of the participating projects, minimize duplication of expensive analytical effort, and will provide the most comprehensive view of contamination possible for these data.

Budget

ITEM	DETAIL	PROJECT COST
SALARIES		
	Principal Investigator: GM-13; 0.35 FTE	25069
	Research Fish. Biologist: GS-11; 1.0 FTE	48634
	Research Fish. Biologist: GS-07; 1.0 FTE	32859
TRAVEL		
	2 RT JNU-ANCH MEETING $500 + $196/D Per Diem, 3d	2064
	2 RT JNU-SEA MEETING $550 + $103/D Per Diem, 3d	1718
CONTRACTS		
	Computer programming, mapping, software development, and software integration services	40000
EQUIPMENT		
	Compaq 486 computer, OS/2 operating system, software including SAS and GEO/SQL	15000
SUPPLIES		
	Map and report production, misc. software	9656
TOTAL COSTS		175000

PROJECT: River Otter Damage Assessment PROJECT LEADER: Jim Faro

PROJECT NO: TM3 ADF&G Budget LOCATION: Soldotna PHONE: (907)262-9368

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	31.5	33.5	65.0
72000	2.3	1.7	4.0
73000	61.2	49.5	110.7
74000	4.0	0.0	4.0
75000	0.0	0.0	0.0
TOTAL	99.0	84.7	183.7

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

COMMENTS: River otters and their foods suffered from both short- and long-term effects of the oil spill. Continuation of this study will serve to assess the continuing impact of the oil spill on river otters. This work is expected to double the sample base and follow the impacts into the fourth year. This will be accomplished by trapping otters in the spring when they are most vulnerable to capture. Sample size for assessment of the impacts to otters will be increased. The number of samples obtained from previous efforts are minimal in certain age classes. For instance, adult males are not adequately represented so the impact on adult males is unknown. The bulk of the non-salary funds requested for this work are in vessel support. A portion of the funds are for continuing suport and analysis from UAF.

This program is designed to provide assessment of impacts into the fourth year to better define the trend of recovery and continuing impacts on otters. This phase of the river otter work is not expected to continue beyond this year so the study plan includes close-out work and preparation of a final report on the river otter NRDA work. This work is a companion proposal to the river otter restoration proposal. One-half of the Principal Investigator's salary is proposed in this project and one-half in the restoration project.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	MOS	LOCATION	INCUMBENT	SUPERVISOR
11-7072	18L	Wildlife Biologist III	6.0	Soldotna	Faro	Calkins
11-7071	11J	Fish & Wildlife Tech. III	3.0	Anchorage	VanDen Bosch	Faro
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			

FULL TIME EQUIVALENTS - FTEs (Months/12): 0.8

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel		0.0	0.0	0.0
72270 Administrative Travel	3 RT Sol/Fbks, 3 RT Anch/Sol	0.4	1.1	1.5
72300 Conventions/Meeting Travel		0.0	0.0	0.0
72360 Moving/Relocation Expenses		0.0	0.0	0.0
72500 Per Diem		0.4	0.6	1.0
Alaska RR	Transport personnel, gear	1.5	0.0	1.5
	SUBTOTAL	2.3	1.7	4.0

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services	UAF Contract - Bowyer	0.0	36.0	36.0
73100 Professional Services	UAF Contract- Blood Analysis	0.0	6.0	6.0
73100 Professional Services	UAF Contract - DNA Analysis	0.0	7.5	7.5
73420 Trans-State Equip Fleet Fees	Vessel Charter	58.7	0.0	58.7
73500 Advertising, Printing, Binding		0.0	0.0	0.0
73600 Public Utilities Services		0.0	0.0	0.0
73700 Minor Repair/Maintenance		1.0	0.0	1.0
73800 Rental-Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental-Machinery/Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services	Air Charter	1.5	0.0	1.5
		0.0	0.0	0.0
	SUBTOTAL	61.2	49.5	110.7

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies	Maps of Prince William Sound	0.1	0.0	0.1
74520 Professional/Scientific Supplies	Drugs to immobilize otters	0.5	0.0	0.5
74560 Data Processing Supplies		0.0	0.0	0.0
74600 Other Operating Supplies		0.0	0.0	0.0
74650 Repair & Maintenance Supplies	Skiff, outboard maintenance	1.0	0.0	1.0
OTHER	Gas, oil	2.4	0.0	2.
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	4.0	0.0	4.0

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment		0.0	0.0	0.0
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	0.0	0.0	0.0

PROJECT: Sockeye Salmon Overescapement PROJECT LEADER: Dana Schmidt

PROJECT NO: F/S #27 LOCATION: Soldotna PHONE: 907/262-9369

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	146.6	183.3	329.9
72000	5.0	7.0	12.0
73000	41.0	83.8	124.8
74000	28.0	24.1	52.1
75000	0.0	6.0	6.0
TOTAL	220.6	304.2	524.8

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type of information needed.

BUDGET SUMMARY INCLUDING BIOMETRIC SUPPORT COSTS.

COMMENTS:

This project will examine the effects of large spawning escapements, caused by the Exxon Valdez oil spill, on the resulting progeny for a select subset of sockeye nursery lakes. Three impacted lake systems where the escapement in 1989 was over twice the desired levels (Kenai/Skilak in Upper Cook Inlet (UCI); Red and Akalura Lakes on Kodiak Island) were selected. Tustumena Lake in UCI and Upper Station Lake on Kodiak did not receive a large escapement and will be examined as controls.

This study is necessary to obtain a more timely assessment of impact because adult sockeye produced from the 1989 escapement will not return until the 1994-95 season. Further, total return data are not available for individual Kodiak sockeye systems due to the complex mixed-stock nature of the commercial fisheries and the inability to estimate stock-specific catches.

In addition to continued sampling of lake productivity and population demographics of young sockeye salmon, new activities are proposed to insure study results are valid. On Kodiak, estimation of spawner distribution outside of the Red Lake system will be completed by establishing an adult weir immediately below Red Lake. Second, the very low numbers of outmigrating smolt estimated by trapping and marking smolt may be biased due to trap avoidance by the marked fish. A full weir to enumerate smolt is proposed to verify the current smolt enumeration method.

On the Kenai River, the smolt operation requires additional samples from the Russian River system to verify the aging techniques. Trapping will also continue into July to insure current projections of smolt production failure do not arise from sampling bias. A late fall fry sampling period will be added to the current sampling regime. If poor survival is occurring from limitations in rearing habitat quality during this period, these data are crucial for determining the validity of a density-dependent reduction of over-wintering survival of fry.

PCN/I NEW	RANGE/ STEP	CLASSIFICATION	4 MOS	8 MOS	12 MOS	LOCATION	INCUMBENT	SUPERVISOR
11-5187	14C	Fishery Biologist I	2	4	6	Soldotna	P. Shields	G. Kyle
11-5270	16B	Fishery Biologist II	2	4	6	Kodiak	S. Honnold	L. White
11-5300	11D	Fishery Technician III	0	4	4	Soldotna	L. Kempf	J. Edmundson
11-1333	14F	Fishery Biologist I	1	4	5	Soldotna	Davis	K. Tarbox
11-1381	14B	Fishery Biologist I	2.5	2	4.5	Soldotna	Westerman	K. Tarbox
11-1642	11B	Fishery Technician III	2.5	2	4.5	Soldotna	Schlenker	K. Tarbox
11-1615	9B	Fishery Technician II	0	1.5	1.5	Soldotna	Beliveau	K. Tarbo:
11-1328	14B	Fishery Biologist I	2	1	3	Soldotna	Cofske	K. Tarbox
11-1954	9B	Fishery Technician II	2	1	3	Soldotna	Derning	K. Tarbox
11-1374	9B	Fishery Technician II	2	1	3	Soldotna	Brannen	K. Tarbox
New	14A	Fishery Biologist I	1	5.5	6.5	Soldotna	Vacant	K. Tarbox
11-N837*	11B	Fishery Technician III	2	2.2	4.2	Kodiak	Geigerich	B. Barrett
11-N833*	9B	Fishery Technician II	2	2.2	4.2	Kodiak	Cartenall	B. Barrett
11-N834*	9B	Fishery Technician II	2	1.2	3.2	Kodiak	Hicks	B. Barrett
11-N835*	9B	Fishery Technician II	2	1.2	3.2	Kodiak	Marx	B. Barrett
11-1825*	11E	Fishery Technician III	2	2.5	4.5	Kodiak	Phillips	B. Barrett
11-1417*	14C	Fishery Biologist II	0	0.5	0.5	Kodiak	Roche	B. Barrett
11-1118*	14C	Fishery Biologist II	0	1.5	1.5	Kodiak	Scott	B. Barrett
11-7018	16C	Fishery Biologist III	0	3	3	Kodiak	Swanton	B. Barrett
11-1521*	9A	Fishery Technician I	2	0	2	Kodiak	Riverest	B. Barrett

New	14A	Fishery Biologist I	1.1		1.1	Kodiak	Vacant	rrett
New	11A	Fishery Technician III	1.1	0	1.1	Kodiak	Vacant	B. Barrett
New	11A	Fishery Technician II	1.1	0	1.1	Kodiak	Vacant	B. Barrett
11-7082	8C	Clerk Typist III	1.5	0	1.5	Anchorage	Jean	M. Sloan
11-N471	10A	College Intern III	1.5	0	1.5	Anchorage	Simmons	M. Sloan
11-7030	19C	Biometrician II	0	4	4	Anchorage	Hasbrouck	W. Hauser
FULL TIME EQUVALENTS - FTEs (Months/12)			2.9	4	7			

* Includes 712 Hours overtime.

72000 T L	D APTION	4 MOS	8 MOS	12 MOS
72240 Field Travel	Ken-Kod(10);Ken-Anch(12); Anch-Kod(1)	2.6	3	5.6
72270 Administrative Travel	Ken-Anch (3); Ken-Juneau(2)	0.6	0.8	1.4
72300 Conventions/Meeting Travel		0	0	0
72360 Moving/Relocation Expenses		0	0	0
72500 Per Diem	Per Diem	1.8	3.2	5
		0	0	0
	SUBTOTAL	5	7	12

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services	Lab Analysis, Calibrate Equip	13	49.5	62.5
73300 Communication	Telephone, Postage	0.7	0.3	1
73400 Transportation	Air Charter - Equip & Crews	21	25	46
73420 Trans-State Equip Fleet Fees	Mil. 8 trps x 120mi/trp x .52/m	0.1	0.4	0.5
73500 Advertising, Printing, Binding	Btle labels;Print Opscam forms	0.1	0.7	0.8
73600 Public Utilities Services		0	0	0
73700 Minor Repair/Maintenance	Misc equip repair (nets,motors, traps,etc)	5.2	6.9	12.1
73800 Rental-Land/Buildings/Machinery		0	0	0
73860 Rental-Machinery/Equipment		0	0	0
73900 Other Expenditures & Services	Freight for equip; Training	0.9	1	1.9
	SUBTOTAL	41	83.8	124.8

74000 SU ...S	DE ...TION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies	Copier & misc offics supplies	0.7	0.2	0.9
74520 Professional/Scientific Supplies	Limno, hydroac, & smolt equip	2.8	6.9	9.7
74560 Data Processing Supplies	Log books, misc field/computer	1.1	0.3	1.4
74600 Other operating Supplies		0	0	0
74650 Repair & Maintenance Supplies	Supplies to repair field camps & equipment	8.7	4.6	13.3
OTHER	Misc supplies (fuel, rope,	14.7	12.1	26.8
OTHER	anchors, survival gear, etc)	0	0	0
OTHER		0	0	0
	SUBTOTAL	28	24.1	52.1

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0	0	0
75790 Communication Equipment		0	0	0
75830 Data Processing Equipment	Computer hardware	0	0.6	0.6
75870 Laboratory & Scientific Equip	Replace light meter	0	1.5	1.5
75940 Special Equipment	Radar unit for boat - position stations	0	2.4	2.4
75050 Furniture & Office Equipment		0	0	0
OTHER	Hydroac. digital tape player	0	1.5	1.5
OTHER		0	0	0
	SUBTOTAL	0	6	6

PROJECT: Run Reconstruction and Life History PROJECT LEADER: Geiger and Gates

PROJECT NO: F/S #28 LOCATION: PHONE:

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	24.0	150.0	174.0
72000	0.8	3.2	4.0
73000	26.5	190.0	216.5
74000	28.1	8.4	36.5
75000	43.6	43.6	43.6
TOTAL	123.0	395.2	474.6

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type information needed.

COMMENTS:

While hatcheries in Prince William Sound are producing salmon at all-time record levels, the wild stocks are severely depressed. These wild stocks, which are an important part of the natural ecosystem and to the fishing industry as well, originate from a multitude of natal locations throughout the Sound. Our goal is to quantify the damage to the wild stocks of the Sound that resulted from the Exxon Valdez oil spill. This understanding is an important scientific issue in its own right. However, understanding this damage is necessary for continuing fishery management of injured stocks and natural restoration.

This project, which is actually a series of linked studies, will be used to directly estimate the the population level effects of the oil spill on Prince William Sound pink salmon. The project calls for a one-time adult tagging study in 1992 at an approximate cost of $450,000, and an analysis and model development in 1993 through February of 1994. That model will form the basis for future wild stock management decisions.

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	MOS	LOCATION	INCUMBENT	SUPERVISOR
11-1928	19-J	Biometrican II	3.0	Juneau	Hal Geiger	Doug Eggers
11-7011	19-A	Biometricain I	12.0	Juneau	Rich Gates	Hal Geiger
11-N316	14	FB-I	8.0	Cordova		Rich Gates
11-N192	9	FT-II	6.0	Cordova		
11-N194	9	FT-II	5.0	Cordova		
11-N195	9	FT-II	5.0	Cordova		
11-N197	9	FT-II	5.0	Cordova		
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
			0.0			
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			0.0			
			0.0			
			0.0			
			0.0			

FULL TIME EQUIVALENTS - FTEs (Months/12): 3.7

72000 TRAVEL	DESCRIPTIO	4 MOS	8 MOS	12 MOS
72240 Field Travel		0.0	1.5	1.5
72270 Administrative Travel		0.4	0.8	1.2
72300 Conventions/Meeting Travel		0.4	0.9	1.3
72360 Moving/Relocation Expenses		0.0 *	0.0	0.0
72500 Per Diem		0.0	0.0	0.0
		0.0	0.0	0.0
		0.8	3.2	4.0

73000 CONTRACTUAL	DESCRIPTIO	4 MOS	8 MOS	12 MOS
73100 Professional Services		23.3	0.0	23.3
73300 Communication		0.0	0.0	0.0
73400 Transportation		0.0	190.0	190.0
73420 Trans-State Equip Fleet Fees		0.0	0.0	0.0
73500 Advertising, Printing, Binding		2.5	0.0	2.5
73600 Public Utilities Services		0.0	0.0	0.0
73700 Minor Repair/Maintenance		0.0	0.0	0.0
73800 Rental-Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental-Machinery/Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services		0.7	0.0	0.7
		0.0	0.0	0.0
		26.5	190.0	216.5

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies		0.0	0.4	0.4
74520 Professional/Scientific Supplies		26.5	0.0	26.5
74560 Data Processing Supplies		0.0	0.0	0.0
74600 Other operating Supplies		1.6	8.0	9.6
74650 Repair & Maintenance Supplies		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
		28.1	8.4	36.5

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment		43.6	0.0	43.6
75870 Laboratory & Scientific Equip		0.0	0.0	0.0
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
		43.6	0.0	43.6

ALASKA DEPARTMENT OF FISH & GAME

OY4

PROJECT: Database Management

PROJECT LEADER: Carmine DiCostanzo

PROJECT NO: FS #30

LOCATION: Juneau

PHONE: 465 4150

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	51.4	102.8	154.0
72000	2.1	4.8	6.9
73000	3.5	6.9	10.4
74000	1.0	3.6	4.6
75000	2.8	2.8	2.8
TOTAL	60.8	120.9	178.7

This is to be the department's OY4 budget request for the above project. On the following pages please explain, in detail, the actual distribution of this money and summarize it on the first page.

Page 5 is an example, by line item, of the type information needed.

COMMENTS:

71000 PERSONAL SERVICES - LIST POSITIONS

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	MOS	LOCATION	INCUMBENT	SUPERVISOR
7033	19A	Analyst/Programmer IV	12.0	Juneau	Simonson	DiCostanzo
7036	16A	Publications Spec II	12.0	Juneau	Savikko	DiCostanzo
7034	15A	Analyst/Programmer II	12.0	Juneau	Lovelady	DiCostanzo
			0.0			
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			0.0			
			0.0			

FULL TIME EQUIVALENTS - FTEs (Months/12): 3.0

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel	2 Trips to Cordova, 2 to Anch.,	1.7	2.0	3.7
72270 Administrative Travel		0.0	0.0	0.0
72300 Conventions/Meeting Travel	1 San Francisco Developers Conf	0.0	1.0	1.0
72360 Moving/Relocation Expenses		0.0	0.0	0.0
72500 Per Diem	17 days	0.4	1.8	2.2
		0.0	0.0	0
	SUBTOTAL	2.1	4.8	6.9

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services		0.0	0.0	0.0
73300 Communication	1/3 leased line cost from Anch	3.0	5.4	8.4
73400 Transportation		0.0	0.0	0.0
73420 Trans-State Equip Fleet Fees		0.0	0.0	0.0
73500 Advertising, Printing, Binding	Documentation and User Guides	0.5	1.0	1.5
73600 Public Utilities Services		0.0	0.0	0
73700 Minor Repair/Maintenance		0.0	0.0	0.0
73800 Rental-Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental-Machinery/Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services	Conference Fee	0.0	0.5	0.5
		0.0	0.0	0.0
	SUBTOTAL	3.5	6.9	10.4

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies		0.0	0.0	0.0
74520 Professional/Scientific Supplies		0.0	0.0	0.0
74560 Data Processing Supplies	Software Maintenance	0.5	2.0	2.5
74600 Other operating Supplies		0.0	0.0	0.0
74650 Repair & Maintenance Supplies	Hardware Maintenance Misc suppl	0.5	1.6	2.1
OTHER		0.0	0.0	
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	1.0	3.6	4.6

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment	Disk Drive	2.0	0.0	2.0
75870 Laboratory & Scientific Equip		0.0	0.0	
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment	Chair	0.8	0.0	0.8
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	2.8	0.0	2.8

ALASKA DEPARTMENT OF FISH & GAME
OY4

PROJECT: Database Management — PROJECT LEADER: Carmine DiCostanzo

PROJECT NO: FS #30 — LOCATION: Juneau — PHONE: 465 4150

REQUEST

LINE ITEM	4 MONTHS	8 MONTHS	12 MONTHS
71000	51.4	102.8	154.0
72000	2.1	4.8	6.9
73000	3.5	6.9	10.4
74000	1.0	3.6	4.6
75000	2.8	2.8	2.8
TOTAL	60.8	120.9	178.7

This is to be the department's OY4 budget request for the above project.

COMMENTS: FS-30 Database Management:

- Catalogues, archives, and maintains the principal copy of raw electronic data sets for FS-1, 2, 3, 4A, 11, 13, 27, 28, ST-5, (FS-5, ST-2AB, ST-6).
- Facilitates direct access by PI's to historical fisheries data sets essential to NRDA/R studies. Historical data includes fisheries catch and escapement figures.
- Proposes to unify the data catalogues and maintenance of principal data sets for continuing ADFG fisheries assessment/restoration/monitoring projects. This should facilitate sharing raw data between agencies and providing this information to the public.
- Proposes catalogue, archive, and maintenance support of principal electronic data for R-53, 58, 59, 60ABC, 101, 105, 113, 114, 115A, 166, 117, (R-49, 52, 90, 106).
- Provides data processing and technical support for PI's and NRDA/R functions, including the use of ADFG Commercial Fisheries WAN (wide area computer network).

71000 PERSONAL SERVICES - LIST POSITIONS

PCN/NP/ NEW	RANGE/ STEP	CLASSIFICATION	MOS	LOCATION	INCUMBENT	SUPERVISOR
7033	19A	Analyst/Programmer IV	12.0	Juneau	Simonson	DiCostanzo
7036	16A	Publications Spec II	12.0	Juneau	Savikko	DiCostanzo
7034	15A	Analyst/Programmer II	12.0	Juneau	Lovelady	DiCostanzo
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FULL TIME EQUIVALENTS - FTEs (Months/12): 3.0

72000 TRAVEL	DESCRIPTION	4 MOS	8 MOS	12 MOS
72240 Field Travel	2 Trips to Cordova, 2 to Anch.,	1.7	2.0	3.7
72270 Administrative Travel		0.0	0.0	0.0
72300 Conventions/Meeting Travel	1 San Francisco Developers Conf	0.0	1.0	1.0
72360 Moving/Relocation Expenses		0.0	0.0	0.0
72500 Per Diem	17 days	0.4	1.8	2.2
		0.0	0.0	0
	SUBTOTAL	2.1	4.8	6.9

73000 CONTRACTUAL	DESCRIPTION	4 MOS	8 MOS	12 MOS
73100 Professional Services		0.0	0.0	0.0
73300 Communication	1/3 leased line cost from Anch	3.0	5.4	8.4
73400 Transportation		0.0	0.0	0.0
73420 Trans-State Equip Fleet Fees		0.0	0.0	0.0
73500 Advertising, Printing, Binding	Documentation and User Guides	0.5	1.0	1.5
73600 Public Utilities Services		0.0	0.0	0
73700 Minor Repair/Maintenance		0.0	0.0	0.0
73800 Rental-Land/Buildings/Machinery		0.0	0.0	0.0
73860 Rental-Machinery/Equipment		0.0	0.0	0.0
73900 Other Expenditures & Services	Conference Fee	0.0	0.5	0.5
		0.0	0.0	0.0
	SUBTOTAL	3.5	6.9	10.4

74000 SUPPLIES	DESCRIPTION	4 MOS	8 MOS	12 MOS
74420 Office & Library Supplies		0.0	0.0	0.0
74520 Professional/Scientific Supplies		0.0	0.0	0.0
74560 Data Processing Supplies	Software Maintenance	0.5	2.0	2.5
74600 Other operating Supplies		0.0	0.0	0.0
74650 Repair & Maintenance Supplies	Hardware Maintenance Misc suppl	0.5	1.6	2.1
OTHER		0.0	0.0	0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	1.0	3.6	4.6

75000 EQUIPMENT	DESCRIPTION	4 MOS	8 MOS	12 MOS
75750 Vehicles & Transportation Equip		0.0	0.0	0.0
75790 Communication Equipment		0.0	0.0	0.0
75830 Data Processing Equipment	Disk Drive	2.0	0.0	2.0
75870 Laboratory & Scientific Equip		0.0	0.0	0
75940 Special Equipment		0.0	0.0	0.0
75050 Furniture & Office Equipment	Chair	0.8	0.0	0.8
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
OTHER		0.0	0.0	0.0
	SUBTOTAL	2.8	0.0	2.8

11.1.1 C

Proposed 1992 Oil Year 4 Costs

March 1, 1992 - February 28, 1993

Combined Federal & State

Damage Assessment	$ 8,307,350
Restoration	$14,709,816
Total	$23,017,166

TABLE 1 CONTINUATION

TS1	Hydrocarbon Analyses	NOAA/USFWS	$950,000	
TS3	GIS Mapping	ADNR/USFWS	400,000	Placeholder
			Category Subtotal	$1,350,000
ST4	Fate and Toxicity of EVOS Oil	NOAA	$160,000	
ST5	Injury to Shrimp	ADF&G	80,600	
ST8	Mussel Tissue and Sediment Hydrocarbon Data Synthesis	NOAA	175,000	
			Category Subtotal	$415,600
TM3	Assessment of the Effects of the EVOS on River Otter and Mink in PWS	ADF&G	$184,000	
			Category Subtotal	$184,000
FS27	Sockeye Salmon Overescapement	ADF&G	$524,800	
FS28	Run Reconstruction	ADF&G	474,600	
FS30	Database Management	ADF&G	178,700	
			Category Subtotal	$1,178,100
			CONTINUATION TOTAL	$3,127,700

AW1	Surface Oil Maps	ADEC	$15,000	
ST1A	Petroleum Hydrocarbon-induced Injury to Subtidal Marine Sediment Resources	NOAA	$100,300	
ST1B	Hydrocarbon Mineralization Potentials and Microbial Populations in Sediment	ADEC	16,000	
ST2A	Injury to Shallow Benthic Communities	ADF&G (UA)	125,000	
ST2B	Deep Water Benthos	ADF&G (UA)	80,000	
ST3A	Bioavailability and Transport of Hydrocarbons in the Near Shore Water Column	NOAA	29,300	
ST3B	Bioavailability and Transport of Hydrocarbons in the Near Shore Water Column	ADEC	46,700	
ST6	Injury to Rockfish	ADF&G	15,000	
ST7	Injury to Demersal fishes	NOAA	66,100	
			Category Subtotal	$493,400
CH1A	Comprehensive Assessment of Coastal Habitat	USFS	$2,950,000	
CH1B	Pre-spill and Post-spill Concentrations of Hydrocarbons in Mussels in PWS	NOAA	40,000	
			Category Subtotal	$2,990,000
MM1	Effects of EVOS on Distribution and Abundance of Humpback Whales in PWS	NOAA	$15,000	
MM2	Assessment of Injuries to Killer Whales in PWS, Kodiak Archipeligo, Southeast Alaska	NOAA	35,000	
MM6	Assessment of Magnitude/Extent/Duration of Oil Impacts to Sea Otters	USFWS	200,000	
			Category Subtotal	$250,000
ARCH1	Archaeological Survey	ADNR	$206,850	
		USFS	20,000	
			Category Subtotal	$226,850
FS1	Salmon Spawning Area Injury	ADF&G	$65,600	
FS2	Egg/Pre-emergent Fry Sampling	ADF&G	36,700	
FS3	Coded-wire Tag Recovery and Analysis	ADF&G	118,600	
FS4A	Early Marine Salmon Injury	ADF&G	136,400	
FS4B	Effects of Oil Contamination on Juvenile Pink Salmon in PWS	NOAA	120,000	
FS5	Dolly Varden Injury	ADF&G	18,000	
FS11	Herring Injury	ADF&G	287,000	
FS13	Clam Injury	ADF&G	93,100	
			Category Subtotal	$875,400
B2	Boat Surveys to Determine Distribution and Abundance of Birds and Sea Otters	USFWS	$60,000	
B3	Population Surveys of Seabird Nesting Colonies: Murres	USFWS	125,000	
B4	Assessing the Effects of EVOS on Bald Eagles	USFWS	75,000	
B6	Assessment of the Abundance of Marbled Murrelets along KP and PWS	USFWS	18,000	
B7	Assessment of the Effects of EVOS on Fork-Tailed Storm Petrel	USFWS	5,000	
B8	Assessment of Injuries to Reproductive Success of Black-Legged Kittiwakes in PWS	USFWS	5,000	
B9	Assessment of injuries to pigeon guillemot populations	USFWS	18,000	
B11	Injury Assessment of Hydrocarbon Uptake by Sea Ducks	ADF&G/USFWS	20,000	
B12	Assessment of Injury to Shorebirds in PWS and KP	USFWS	18,000	
			Category Subtotal	$344,000
			CLOSEOUT TOTAL	$5,179,650
			DAMAGE ASSESSMENT TOTAL	$8,307,350

March 1, 1992 - February 28, 1993
COMBINED STATE/FEDERAL RESTORATION

TABLE 2 — RECOVERY MONITORING —

R5	Brown Bear Monitoring	NPS	$60,000		
R6	Sea Otter Restoration Project	USFWS	687,000		
R11	Murre Restoration Project	USFWS	571,000		
R13	Boat Surveys to Determine Distribution and Abundance of Migratory Birds and Sea Otters	USFWS	250,000		
R17	Black Oystercatcher Restoration Project	USFWS	59,000		
R60C	Pink Salmon Egg/Fry Monitoring	ADF&G	199,200		
R82	Killer Whale Monitoring	NOAA	177,900		
R90	Anadromous Sport fish Status and Evaluation Dolly Varden	ADF&G	264,600		
R95	River Otter Restoration Study	ADF&G	139,000		
R101	Subtidal Recovery	ADF&G/ADEC/NOAA	985,000	Placeholder	
R102	Coastal Habitat	MULTI-AGENCY	700,000	Placeholder	
R103	Oiled Mussel Beds	NOAA/ADF&G/DNR	750,000	Placeholder	
		Recovery Monitoring Subtotal		$4,842,700	

TECHNICAL SUPPORT

R92	GIS Mapping & Analysis	USFWS/ADNR	$300,000	Placeholder	
		Technical Support Subtotal		$300,000	

RESTORATION IMPLEMENTATION

Management Actions

R20	Bald Eagle Restoration Project	USFWS	$225,000		
R52	Development of a Restoration Plan for Rockfish	ADF&G	232,500		
R53	Kenai River Sockeye Salmon Restoration	ADF&G	634,400		
R58	Herring Restoration & Monitoring	ADF&G	552,200		Synthesis Meeting
R59	Assessment of Genetic Stock Structure of Salmonids	ADF&G	290,000		
R60A&B	Pink Salmon Stock ID and Population Monitoring	ADF&G	1,654,100		Matched to $1.17M
R73	Harbor Seal Restoration Study	ADF&G	210,300		from State
R104	Archaeological Resource Protection	DOI/DOA/ADNR	345,000		
R106	Technical Support Study for the Restoration of Dolly Varden/Cutthroat Trout	USFS/ADG&G	287,206		Maximum
R118	Public Information and Education	NPS	180,000		
		Category Subtotal		$4,610,706	

Manipulation Enhancement

R37	Paulson Creek Fish Ladder Modification	USFS	$9,444		
R41	Otter Creek Fish Pass	USFS	44,563		
R45	Montague Island Chum Salmon Restoration	USFS	25,570		
R105	W. PWS Restoration Survey & Project Planning/ Survey/Evaluation of Instream Habitat & Stock Restoration Techniques (Combine R42 & R86)	USFS/ADG&G	433,816		Maximun
R113	Red Lake Sockeye Salmon Restoration	ADF&G	45,000		
R114	Mitigation for Red Lake Sockeye Salmon Fishery	ADF&G	162,000		
R115	Restoration of Coghill Lake Sockeye Salmon	USFS/ADF&G	184,055		
R116	Fry Rearing to Improve Survival of PWS Salmon	ADF&G	614,300		
R117	Sport Fish Restoration & Enhancement in Cook Inl	ADF&G	1,700,000		Matched to 1.7M from state
		Category Subtotal		$3,218,748	

Habitat Acquisition/Protection

R15	Marbled Murrelet Restoration Project	USFWS/USFS	$359,000		
R47	Stream Habitat Assessment	ADF&G	371,062		
R71	Harlequin Duck Restoration & Monitoring	ADF&G/USFWS	407,600		
R96	Identification of Habitats Relevent to Injured Species	MULTI-AGENCY	600,000	Placeholder	
		Category Subtotal		$1,737,662	
		Restoration Implementation Subtotal		$9,567,116	
		RESTORATION TOTAL		$14,709,816	
		COMBINED DAMAGE ASSESSMENT AND RESTORATION TOTAL		$23,017,166	

1992 Damage Assesment Workplan
Report Date 02/01/92
Report Time 15:26:01

Damage Assessment Continuation

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description/Justification Plan
TS1	Hydrocarbon Analytical Support Services	FWS	150000.	Yes	This project will support various NRDA studies including sea otters,birds,coastal habitat, subtidal, fisheries, and other NRDA studies that have outstanding hydrocarbon analytical or interpretive needs. This information will be essential for understanding the injuries to various resources and to evaluating restoration needs.
TS1	Hydrocarbon Support Services and Analysis of Distribution/Weathering of Oil	NOAA	800000.	Yes	This project coordinates the analysis of samp;es for petroleum hydrocarbons for all NRDA projects and archive the results in a single, integrated coordinated data set. A substantial inventory of samples still need analysis. TS1 also developed and manages an analytical quality assurance program which ensures that analytical data are of defensible quality and complies with NRDA regulations.
TS3	GIS Mapping and Analysis of Damage Assessment Data	FWS	100000.	Yes	This project will support sea otters, boat surveys, murres, bald eagles, marbled murrelets and other FWS NRDA studies that have outstanding GIS components to their data analysis and report production. The prep. of final repts will be essentialfor understanding the the injuries to birds and otters and evaluating the restoration needs of the resource.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description/Justification Plan
TS3	GIS Mapping	ADNR	300000.	Yes	GIS mapping and analysis is required to supplement specific NRDA studies in terms of displaying, for purposes of conclusionary analysis, study injury information against supporting themes such as floating oiling, shoreline oiling, hydrocarbon analysis, locations of related habitats, etc. This also provides a comprehensive geographic picture of injury resulting from EVOS which will aid in directing restoration decisions.
ST4	Fate and Toxicity of EVOS Oil	NOAA	160000.	Yes; modified to reduce scope	This study determines the toxicity of oiled environmental samples using standard toxicity tests; examines the extent to which any observed toxicity may be attributed to weathered oil; and synthesizes the the data and information on the geographic distribution, weathering, and potential effects of petroleum on living marine resources. Data and information on the fate of EVOS oil through time will provide essential context for the interpretation of injury to, and recovery from the spill.
ST5	Injury to Shrimp	ADF&G	80600.	Yes; Closeout; Final Rept. due Nov 1992	This project will document oil-induced impacts to fecundity, egg mortality, and tissue damage to Spot Shrimp. The confounding effects of pre-spill commercial fishing on the populations will be analyzed by comparing relative abundance by weight, number, and sex of adults, and size and age frequencies between shrimp from different sites. Data from 1991 surveys will be completed.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description/Justification Plan
ST8	Mussel Tissue and Sediment Hydrocarbon Data Synthesis	NOAA	175000.	Yes	This project will evaluate sediment and mussel tissue sample hydrocarbon data, to objectively identify the presence of EVOS hydrocarbons in these samples, and provide synthesisof these results from all projects. This will provide a common reference for each participating projects, will minimize duplication of expensive analytical effort, and will provide the most comprehensive view of contamination possible for these data.
TH3	Assessment of the effects of the EVOS on River Otter and Mink in PWS	ADF&G	184000.	Yes;Final Rept. due Dec 1992. Analyze 91 data	River otters suffered direct mortality from oil and their habitat was degraded. River otter diet was reduced, growth impaired, and home range size increased. Continuing injury is indicated by blood chemistry analysis. Data collected in 1992 will determine whether continuing damage is occuring. Laboratory analysis continues. All data will be compiled, analyzed and a final report written. High quality habitat will be identified.
FS27	Sockeye Salmon Overescapement	ADF&G	524800.	Yes; Modified; Include other Cook Inlet Streams	EVOS restricted commercial fishing resulting in overescapement of spawning adult sockeye and production of fry beyond the carrying capacity of some Kodiak and Kenai lake systems.Massive starvation followed; few smolt were produced and few adults are expected to return 1993-95. Injury monitoring continues in 1993. Other systems will be examined for similar impacts.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description/Justification Plan
FS28	Run Reconstruction/Life History Model	ADF&G	474600.	Yes; Modified	This project incorporates data from several studies to estimate the population level effects of EVOS on PWS pink salmon. The project calls for a one-time adult tagging/recapture study in 1992 to determine adult movements in PWS 1994. The model will direct future wild stock management decisions which protect injured stocks from overharvest.
FS30	Database Management	ADF&G	178700.	Yes	This project will catalog and maintain the principal copy of raw electronic data sets for the fish/shellfish and subtidal studies. It will facilitate access to historical fisheries data sets which will include historical fisheries catch and escapement figures. Sharing of raw data between agencies and public will be facilitated.

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Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description/Justification Plan
	Damage Assessment Close-Out				
AV1	Geographic Extent and Temporal persistance of Floating EVOS oil	ADEC	15000.		The information from this project will help other studies determine oiling conditions at their study sites. Overflight information on the location of floating oil from several agencies was used each day to produce a map of oil on water conditions. Mapping was continued untill most of the oil was no longer floating. Some work is needed to finish the maps and prepare a final report.
ST1a	Petroleum Hydrocarbon-Induced Injury to Subtidal Marine Sediment Resources	NOAA	100300.	Closeout; Final Report due Feb 1993	This study determines the spatial and temporal distribution of oil in the subtidal sediments of PWS and the NE Gulf of Alaska. This study supports other studies requiring documentation of hydrocarbon contamination of subtidal areas. i.e. impacts on benthic communities as well as specific fish and invertebrate species. Both the deep benthos and the microbial components of ST1 are heavily dependent on the results of the sediment hydrocarbon analysis, which are only partially completed.
ST1b	Hydrocarbon Mineralization Potentials and Microbial Pops. in Sediment	ADEC	16000.	Closeout; Final Report due June 1992	Microbial numbers and activity in sediments are good indicators of hydrocarbon contamination and mobilization of oil to deeper sediments over time. Microbial activity in 1991 remains high at some sites. The results of this project will be linked with those of the benthic and sediment studies.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description/Justification Plan
ST2a	Injury to Shallow Benthic Communities	ADF&G	125000.	Closeout;Final Rep. due Feb 1993. Fin 91 data	Oil was carried into subtidal habitats. Oil caused mortality to organisms which resulted in invasion by scavengers and opportunistic species and led to food chain effects. Over time oil will be metabolized and normal communities will return. Samples collected in shallow bottom communities in 1991 are being processed and data analyzed to clarify the nature of the injury and the recovery response.
ST2b	Injury to Deep Water Sub-Tidal Benthic Communities	ADF&G	80000.	Closeout;Final Rep. due Feb 1993. Fin. 91 data	Oil was carried into subtidal habitats. Oil caused mortality to organisms which resulted in an invasion by scavengers and opportunistic species and led to food chain effects. Oil will be metabolized and communities will return. Samples collected in deep bottom communities (40-100 m) in 1991 are being subsampled, processed, and analyzed to clarify the nature of the injury and the recovery response.
ST3a	Bioavailability and Transport of Hydrocarbons in the Near Shore Water Column	NOAA	29300.	Closeout; Final Report due November 1992	
ST3b	Bioavailability and Transport of Hydrocarbons in the Near Shore Water Column	ADEC	46700.	Closeout; Final Report due November 1992	Sediment traps located offshore of oiled PWS beaches shows the movement of oil and particulates in the water column. Preliminary results show continued significant movement of oil despite the passage of two years since the spill. The traps need to be retrieved in March 1992 and the samples analyzed to allow a determination of the mobility of oil in the third year and completion of a report synthesizing the three years o data. The mobility of oil is an indication of continuing exposure.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description/Justification Plan
ST6	Injury to Rockfish	ADF&G	15000.	Closeout;Final Report due Fall 1992	Lethal and sub-lethal injuries to rockfish were documented. Histopathological examinations of rockfish tissues and hydrocarbon analyses are presently being conducted. This study will provide a final report of the results of these analyses for use by fishery managers in developing a management plan.
ST7	Injury to Demersal Fishes	NOAA	66100.	Closeout; Final Report due August 1992	
CH1A	Comprehensive Assesment of Coastal Habitat	USFS	2950000.	Closeout; Fin. Rept. 6/1993. Int. Rept. Oct. 1992	The purpose of the study is to document and quantify injuries to biological resources found in the shallow subtidal, intertidal an supratidal zones throughout the shoreline areas affected by the EVOS. Field work was completed in late September 1991. Extensive labor intensive sample sorting and data analysis is necessary before a final report can be completed. This project is the baseline for determining rate and extent of natural recovery.
CH1B	Pre-spill and Post-spill Concentrations of Hydrocarbons in Mussels in PWS	NOAA	40000.	Closeout; _final Rept. due Feb 1993	Levels of hydrocarbons in sediments and mussels in intertidal areas just prior to the EVOS were similar to concentrations measured earlier (1977-1980). This project analyzes and interprets hydrocarbon data and supports other NRDA projects that are species oriented and some Restoration/Recovery Studies. Sample analysis to date is less than half complete.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description/Justification Plan
MM1	Effects of EVOS on Distribution and Abundance of Humpback Whales in PWS	NOAA	15000.	Closeout; Final Rept. due June 1992	During 1989 and 1990 photographs of individual humpback whales occuring in PWS and SE Alaska were collected to assess the impact of EVOS on humpback whale life history and ecology. Synthesis of these data and the review of available scientific literature will produce a final which will be an interprets the results. This information will be helpful to manage the North Pacifics endangered humpback whale population in PWS and GOA.
MM2	Assessment of Injuries to Killer Whales in PWS, Kodiak Archipelago, SE AK	NOAA	35000.	Closeout; Final Rept. due May 1992	This study has documented high numbers of killer whale deaths fro m2 pods in PWS. Pod AB has lost 14 whales while pod AT has lost 11 individuals. In addition to missing whales, significant changes have occured in their social structure. Production of a final report summarizing the three year investigation will allow evaluation of all aspects of the data. This synthesis is also important for continuing research of killer whales under restoration studies.
MM6	Assessment of Magnitude/Extent/Duration of Oil Spill Impacts on Sea Otters	FWS	200000.	Closeout; _Final Rept. due Sept 1992	Up to 5500 sea otters may have died of acute exposure to oil. Continued injury is indicated by higher numbers of prime age carcasses being recovered post-spill than pre-spill and continued declines in abundance in oiled areas possibly from elevated levels of hydrocarbons in sediments and prey. A final report is essential for fully evaluating the sea otter injuries and to adequately address the restoration needs of the resource.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description/Justification Plan
Arch. 1	Archaeological Survey	ADNR	206850.	Closeout; Final Rept. due June 1992	This archeology injury assessment closeout project will complete the analysis of laboratory test results and artifact collections for the state field injury assessment of the effects of direct oiling on the dating of historic and pre-historic sites. A synthesis of data from all of the injury assessment studies will be used to set up the basis for restoration decisions; archeological site protection, data recovery from excavations, museum exhibits using collections & info., and publications
Arch. 1	Archeological Survey	USFS	20000.	Closeout; Final Rept. due June 1992	See Arch. 1 ADNR component
FS1	Salmon Spawning Area Injury	ADF&G	65600.	Closeout; Final Rept due June 1992	Complete the analysis of data collected in prior years. This will improve the accuracy of wild pink salmon escapement estimates. Estimates of aerial survey bias and stream life will be completed. Results willlead to more accurate and precise stock specific fisheries management allowing selective escapement of oil impacted wild stocks.
FS2	Eggs/Pre-Emergent Fry Sampling	ADF&G	36700.	Closeout; Final Rept. due Nov 1992	Complete analysis and report results quantifying the effects of EVOS on salmon eggs and fry. Damages include significantly increased egg mortality and high incidences of abnormalities in alevins and fry from oiled streams. Summarization and publication of these results are important to the completion of damage assesment and the planning of future restoration activities.

Project ID	Title	Sponsor	DY4 Cost	Study Plan Recommendation	Project Description/Justification Plan
FS3	Coded-Wire Tag Recovery and Analysis	ADF&G	118600.	Closeout; Final Rept. due Dec 1992	This is a close out budget for analysis of data from coded-wire tags applied to juveniles and recovered from adults. These data are necessary in order to estimate reductions in salmon production due to EVOS and are important for ongoing and future litigation. They will be used to design and asses the success of important management related implementation projects.
FS4a	Early Marine Salmon Injury	ADF&G	136400.	Closeout;Fin Rept. Mar 1993. Fin. data analysis	This study provided evidence of reduced juvenile growth and survival to adult among juvenile salmon in oiled shoreline habitats. This project will provide additional sample and data analysis sufficient to quantify the effect of oil contamination on fry growth and fry to adult survival. Results from this study will be used in estimates of oil impacts on salmon at the population level.
FS4b	Effects of Oil Contamination on Juvenile Pink Salmon in PWS	NOAA	120000.	Closeout; Final Rept. Nov 1992	Juvenile salmon showed reduced growth in oiled areas. When otolith increment analysis and hydrocarbon tissue measurments are completed there will be an immediate need to update preliminary analyses, draw final conclusions, and process the information into formal final form. These data will be used in revies and synthesis of other NRDA studies.
FS5	Dolly Varden Injury	ADF&G	18000.	Closeout; Final Rept. due Nov 1992	

Project ID	Title	Sponsor	DY4 Cost	Study Plan Recommendation	Project Description/Justification Plan
FS11	Herring Injury	ADF&G	287000.	Closeout; Final Rept due Feb 1993. Mon. recovery	Summarize and complete analysis of three years of data and compare to historical data and the data base. Synthesize all the components of the study including completion of a dose-response experiment and summarizing the laboratory data; completion of the cytogenic and sublethal data for 1989-91 field collections; and completion of histopathological data.
FS13	Clam Injury	ADF&G	93100.	Closeout; Final Rept. due Dec 1992	Complete aging of clams collected during 1991 (provides data for changes in mortality and growth due to EVOS), complete data entry, and analyze all littleneck and butter clam data collected (1989-91). Hydrocarbon analytical results will be analyzed and descriptive GIS mapping products will be developed showing locations of oiled clams.
B2	Boat Surveys to Determine Distribution and Abundance of Migratory Birds	FWS	60000.	Closeout; Final Rept. due Sept 1992	Boat surveys for birds and mammals in PWS include census of both pelagic and shoreline areas; over 120 species of birds and 20 species of mammals have been counted on surveys. Preliminary results indicate that bird populations in PWS declined since pre-spill surveys for 16 species or species groups. A final report will be essential for understanding the injuries the spill caused to marine birds and sea otters and to adequately address the restoration needs of the resource.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description/Justification Plan
B3	Population Surveys of Seabird Colonies in the Spill Area (Murres)	FWS	125000.	Closeout; Final Rept. due Sept 1992	As the oil exited PWS it collided with large rafts of breeding age murres around major nesting colonies killing an estimated 198,000 adult breeding birds, representing 60 to 70 percent of the total breeding population of certain major colonies. This loss resulted in a major behavioral change resulting in reproductive failure for 1989-91. A final report will be essential for understanding the injuries the spill caused to murres and colony breeders and to adequately address the restoration needs.
B4	Assessing the Effects of EVOS on Bald Eagles	FWS	75000.	Closeout; Final Rept. due Sept 1992	Oil contamination of the intertidal habitats used by breeding, wintering and migrating bald eagles have resulted in adverse impacts. Conservative estimates of total mortality is 553 and lost production in 1989 was 133 chicks. The preparation of a final report will be essential for understanding the injuries the spill caused to Bald Eagles. If this information is not available to those responsible for restoration, it will not be possible to addresss the restoration needs of the resource.
B6	Assessment of the Abundance of Marbled Murrelets at Sites along Kenai Penin.	FWS	18000.	Closeout; Final Rept. due Sept 1992	The marbled murrelet pop. in PWS has declined from 300K in 1972 to 100K in 1989-91. In PWS marbled murrelets comprise 12%of all seabird carcasses retrieved in 1989,which is higher than their number at risk at the time of the spill. Apparently health murrelets collected in oiled areas had internal contamination by pet. hydrocarbons. The preparation of a fin. rept. will be essential for understanding the injuries the spill caused and to evaluate restoration needs.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description/Justification Plan
B7	Assessment of the Effects of Petroleum Hydrocarbons on Storm Petrels	FWS	5000.	Closeout; Final Rept. due Sept 1992	Prelim. results suggest that there was no measurable change in petrel reproductive success. It is difficult to conclude that petrels have not been impacted until stomach samples have been analyzed. The completion of data analysis and prep. of a fin. rept. will be essential for understandin the injuries to petrels.
B8	Assessment of Injuries to Reproductive Success of Blacklegged Kittiwakes-PWS	FWS	5000.	Closeout; Final Rept. due Sept 1992	Black legged kittiwakes are the most abundant colonial nesting seabird in PWS. Prelim. results revealed lower reproductive success for kittiwakes in oiled areas. Analysis is not complete. 37% of birds observed at oiled colonies had oil on breast feathers. Analysis of internal contamination,prey samples,and eggs have not been conducted. Data analysis and prep. of a fin. rept. is essential for understanding the injuries to kittiwakes and to evaluate restoration needs.
B9	Assessment of Injury to Waterbirds Based on Pop. and Breeding Pig. Guillemot	FWS	18000.	Closeout; Final Rept. due Sept 1992	Prelim. data analysis suggest that the count of pigeon guillemots were significantly lower following the spill. To what extent this decline was due to overall population decline or to the oil spill is unknown. The most heavily oiled areas were the areas with the largest declines in numbers. Analysis on all other aspects of th study have not been initiated. Data analysis and the prep. of a fin. rept. will be essential for understanding the injuries to guillemots.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description/Justification Plan
B11	Injury Assessment of Hydrocarbon Uptake by Sea Ducks in PWS	ADF&G/USFWS	20000.	Closeout; Final Rept. due Sept 1992	Significant numbers of sea ducks were killed by the oil spill and continuing injury appears to be causing a reproductive failure in Harlequin ducks. The data on injury to sea ducks particularly harlequin ducks in the spill area from 1989 to 1991 are being analyzed and a final report is being written.
B12	Assessment of Injury to Shorebirds Staging and Nesting in PWS and Kenai Pen.	FWS	18000.	Closeout; Final Rept. due Sept 1992	Prelim. results for the shorebird portion of the study revealed that more heavily oiled portions of PWS probably did not recieve much use by shorebirds. Samples of prey items and birds have not been analyzed th evaluate the degree of contamination vie the food chain. Prelim analysis revealed that oystercatchers exp. reduced productivity in PWS. Data analysis and the fin. rept. will be essential for understanding the injuries to shorebirds and Black Oystercatchers.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description / Justification
			Recovery Monitoring		
5.	Productivity and survival of Brown Bears	NPS	60000.	Yes	This project will continue monitoring of radio collared bears in Katmai National Park to further document reproductive success and survival, including those known to have ingested oil in 1989. Causes of mortality will be determined whenever possible.
6.	Sea Otter Restoration Project	USFWS	687000.	Yes; modified to include components of R7-9	Sea Otters are an important indicator of the health of the nearshore marine environment. Evidence suggests that spill related mortality may still be occuring within sea otter populations. Monitoring the population will determine the rate and point at which affected populations have recovered to pre-spill abundance. Study of habitat use will define spatial and temporal patterns of otters throughout the spill area and identify areas appropriate for protective status.
11.	Murre Restoration Project	USFWS	571000.	Yes; modified to include R19 and 30	Some murre colonies impacted by the oil spill are just beginning indications of returning to a normal breeding behaviour. Other colonies are showing no indications of recovery as of 1991. Monitoring these changes during 1992 and beyond will be essential to determining whether these colonies will recover in 10 or 70 years, or more. Reducing human disturbance is critical to removing further impediments to recovery.

Project ID	Title	Sponsor	DY4 Cost	Study Plan Recommendation	Project Description / Justification
13.	Surveys to Monitor Marine Bird and Sea Otter Populations in area of EVOS	USFWS	250000.	Yes	Restoration of injured marine bird species will require population estimates to determine whether declines continue, and to document recovery. Boat based surveys for birds and mammals in PWS include both pelagic and shoreline areas; and over 120 species of birds and 20 species of mammals. These surveys provide a cost effective statistically rigorous method for monitoring marine bird and sea otter populations. It also provides information useful in determining land management alternatives.
17.	Black Oystercatchers Restoration Project	USFWS	59000.	Yes;modified to delete oiled mussel portions	The Black Oystercatcher is an obligate member of the rocky intertidal community and is a good species for studying the effects of oiling on avian reproductive success. EVOS resulted in reduced productivity. Intertidal prey orgasms of the oystercatcher also experienced diminished productivity and direct mortality. Implementation of this restoration project would monitor the recovery of the oystercatcher population and provide indications of the recovery of the intertidal habitat.
60.3	Pink Salmon Egg/Fry Monitoring	ADF&G	199200.	Yes	This project will continue monitoring injuries to pink salmon eggs and pre-emergent fry. Injuries to pink salmon from spawning ground contamination showed statistically significant increases in egg mortality as well as a high incidence of abnormalities in alevins and fry.
82.	Killer Whale Monitoring and Habitat Studies	NOAA	177900.	Yes	Continued monitoring of the AB pod in PWS is required to document natural recovery of the injured population. Habitat use patterns can identify areas for potential protection or management.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description / Justification
90.	Dolly Varden/Cutthroat	ADFG	264600.	Yes	Monitor the persistence of oil-induced injuries to population. Measure habitat suitability and the growth and survival of populations. Develop and implement a restoration management plan and monitor the recovery of populations. Studies to date have demonstrated increased annual mortality and decreased growth rates in fish from oiled areas.
95.	River Otter Restoration	ADF&G	139000.	Yes; must include oiled mussel link.	River otters suffered direct mortality from oil, and their habitat was significantly degraded, resulting in a reduced diet, smaller size of otters, an increase in home range, and evidence of continuing injury as indicated by blood chemical analysis will Describe otter habitat to build a model that will allow high-quality river otter habitat to be identified.
101.	Recovery Monitoring of Subtidal Communities	ADFG/ADEC	44500.	Yes	Coordinated program will be developed during the January synthesis meeting. The project will monitor the continued persistence of hydrocarbon contamination in the subtidal zone. Recovery of invertrabrate and vegetative communities in subtidal zones will be monitored. Proposals fro reduced scope programs are being prepared.
101.	Recovery Monitoring of Subtidal Communities	NOAA	540000.	Yes	Detailed study plan will be developed following the January coordination meeting. The project will monitor the continued persistence of hydrocarbon contamination in the subtidal zone. Recovery of invertebrate and vegetative communities in subtidal zones will be monitored.
102.	Coastal Habitat Monitoring	Interagency	700000.	Yes	Specific objectives will be developed in a Febuary synthesis meeting. Generally, will monitor the natural recovery of coastal habitats (intertidal and nearshore uplands), including the vertebrate, invertebrate, and vegetative communities.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description / Justification
103.	Oiled Mussel Bed Study	NOAA	500000.	Yes; modified to include multi-species concerns	Determine fate and effects of petroleum hydrocarbons in oiled mussel beds; determine potential for transport to other ecosystem components and assess effects (linkage).
103.	Oiled Mussel Bed Study	ADFG/ADEC/USFWS	250000.	Yes; modified to include multi-species concerns	High oil concentrations in mussels and substrate in oiled beds were found in 1991. This study will determine fate and effects of petroleum hydrocarbons in oiled mussel beds; determine potential for transport to other ecosystem components and assess effects(linkage) to predators such as Harlequin ducks, Oystercatchers, sea otters.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description / Justification
			Technical Support		
92.	Gis Mapping and Analysis	ADNR	100000.	Yes	See description under R92 for USFWS.
92.	Gis Mapping and Analysis	USFWS	200000.	Yes	GIS will provide the most comprehensive geographic data and assure the consistency and quality of these data. GIS will provide users with tools for spatial analysis,overlay analysis, and data integration to better understand complex data. When appropriate the GIS system can provide a means to extrapolate recovery and integrate the results into an ecosystem based evaluation. The restoration process is well positioned to take clear advantage of the GIS technical groups database and expertise.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description / Justification
				Management Actions	
20.	Bald Eagle Restoration Project	USFWS	225000.	Yes; modified to include R21 and R22	Bald Eagles feed and nest within intertidal habitats and are susceptible to the effects of the spill. Post spill surveys revealed low nest success and productivity in PWS in 1989. Evidence in 1989-91 suggest that there may be lingering effects. Monitoring would aid in documenting survival rates, and give an indication of recovery status. Identifying nest sites and concentrated use areas provides the opportunity for additional protection by decreasing disturbance in critical habitat.
52.	Development of a Restoration Plan for Rockfish	ADF&G	232500.	Yes; (Policy decision)	Describe biological characteristics, identify stocks for enhancement, and develop restoration plan. Dead adult rockfish were found immediately after the spill. Fishing pressure increased up to tenfold after salmon fishing was closed in oiled areas. Populations may be too small to support continuing high exploitation.
53.	Kenai River Sockeye Salmon Restoration	ADF&G	634400.	Yes; modified;perhaps include Kodiak	Improve stock assesment techniques to more accurately regulate spawning levels and modify human use. Accuracy and precision will be improved using genetic, parasite, scale pattern and hydroacoustic data. Over escapement of adults following the EVOS produced more fry than the Kenai system could support and most starved. Few smolts were produced and few adults are expected to return. This project maximizes escapement of Kenai stocks.

Project ID	Title	Sponsor	DY4 Cost	Study Plan Recommendation	Project Description / Justification
58.	Herring Restoration and Monitoring	ADF&G	552000.	Yes; modified;reduced scope	Estimate total spawning biomass; discreetness and distribution of herring stocks; identify the level of immigration and emigration inside and outside PWS; identify the origins of spawning and rearing areas and sensitive larval retention areas. Herring exposed to the EVOS as eggs, larvae and juveniles enter the spawning and fishable populations in 1993. Monitoring population level impacts and identifying stocks will direct management and implementation projects.
59.	Assessment of Genetic Stock Structure of Salmonids	ADF&G	290000.	Yes	Improved genetic stock identification capabilities will be implemented to manage the harvest of EVOS damaged stocks in Cook Inlet mixed harvest areas. Samples from the Kenai, Kasilof and Susitna rivers will be analyzed and reduced to stock components. Fishery managers will use this information to identify the presence of Kenai River stocks. Harvest areas and openings will be managed to protect these depleted stocks. See R53 above.
60.1	Pink Salmon Coded Wire Tag Recovery	ADF&G	884500.	Yes	Recover and read coded wire tags from pink salmon adults to make in season estimates of timing and abundance. This knowledge can limit interceptions of wild fish in mixed stock fisheries dominated by hatchery fish. Wild stocks incubated in oiled substrate suffer reduced adult returns. Strong hatchery and weak wild returns increase the need for wild stock protection.
60.2	Adult Pink Salmon Enumeration	ADF&G	769600.	Yes	This project will enumerate the wild salmon escapement and recover tagged adult pink salmon in streams where coded-wire tags were applied to wild pink salmon fry in 1990 and 1991. Tag information will be used by fishery managers as described in 60.1. Same justification as for 60.1.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description / Justification
73.	Harbor Seal Restoration Study	ADF&G	210300.	Yes	A minimum of 200 harbor seals were killed by the oil spill. Behaviour and movement patterns of harbor seals will be studied using satellite tagged animals, allowing habitat use patterns to be understood. Use of haulout sites will be examined. Diving and feeding patterns will be determined. Population trend surveys will be continued. Results will define management actions necessary to promote recovery of harbor seals.
104.	Archeological Resources Protection	USFS/DOI/DNR	345000.	Yes; combined proposal for all agencies.	This project is intended to reduce or eliminate the increased looting and vandalism odduring as a result of the EVOS and assotiated cleanup activities. Local people, throughout the spill zone, will be recruited and involved in the project by the creation of a site stewardship program and through increased agency monitoring.
106.	Restoration of Dolly Varden and Cutthroat in PWS.	USFS	10806.	Yes; combined ADFG/USFS proposal	See R106 ADFG component
106.	Restoration of Dolly Varden and Cutthroat in PWS.	ADF&G	276400.	Yes; combined ADFG7USFS proposal	Identify and categorize stream systems in unoiled locations that support Dolly Varden/Cutthroat trout; evaluate stock structure of overwintering populations. Develop a restoration plan that will protect the biological integrity of wild stocks and facilitate the restoration of injured stocks and replace lost sport fishing opportunities. Stocks in oiled areas suffered decreased growth and increased annual mortality.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description / Justification
118.	Public Information and Education	NPS	180000.	Yes	This project will develop information available from the damage assessment and restoration process which will inform the public about ways they can help injured natural resources recover from the damage of EVOS. Brochures, posters, and other media will be used todeliver the information at state and federal visitor centers, on state ferries, and at cooperating private businesses and organizations throughout the spill zone. EPA has provided an additional $20K for this project through an IAG.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description / Justification
			Manipulation / Enhancement		
37.	Paulson Creek Fish Ladder Modification	USFS	9444.	Yes	Improving fish passage at Paulson Creek would provide access to underutilized habitat for anadromous Dolly Varden, pink salmon and chum salmon. Improved access to the 66000 sq. ft. of spawning habitat would produce an estimated 160 Dolly Varden, and 25000 pink and chum salmon. Estimated yearly values are calculated at $26K per year for 25 yrs.. 1992 work will include fisheries and engineering surveys leading to design in 1993 and construction in 1994.
41.	Otter Creek Fish Pass	USFS	44563.	Yes	A five foot barrier falls on Otter Creek, Bay of Isles, Knight Island could be bypassed by a fish pass and provide access to 80 sq. mtrs. of spawning habitat, a 55 acre rearing lake and a 3 acre pond. Access to this habitat could produce an estimated 2000 sockeye salmon, 2000 pink salmon, 500 cutthroat trout and 400 Coho salmon. In 1992 engineering and fisheries surveys will determine the most appropriate way to access the upstream habitat and conduct the necessary environmental analysis.
45.	Montague Island Chum Salmon Restoration	USFS	25570.	Yes	This is a continuation of last years chum salmon habitat assessment. The project will further evaluate six sites for possible enhancement which includes identifying potential brood stocks and instream modifications to increase productivity. This project will help restore salmon resources in PWS.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description / Justification
105.	Habitat Survey and Evaluation, Project Planning for Salmonids in PWS	USFS	91370.	Yes; combined ADFG/USFS proposal	Identifies the most appropriate restoration techniques for damaged anadromous fish spawning habitats and specific stocks of anadromous fish. Evaluate fish habitat, abundance and limnological data from priority sites, determining optimal fish restoration methods and develops restoration/implementation proposals.Exposure of eggs, fry and juveniles to oil produced decrease the numbers of adults returning to spawn. Implementation projects will increase egg to juvenile survival, speeding recovery.
105.	Habitat Survey and Evaluation, Project Planning for Salmonids in PWS	ADF&G	342446.	Yes; combined ADFG/USFS proposal	See R105 USFS component.
113.	Restoration of Red Lake Sockeye Salmon Fishery	ADF&G	45000.	Yes	Increase incubation and rearing capacity of Pillar Creek hatchery to support additional Red Lake eggs and fry. 1993-95 incubate 6 million and rearing approximately 5.4 million fry. Stock approximately 4.9 million fed fry to produce approximately 146000 adults. Over escapement of adults following the EVOS produced more fry than could be supported by Red Lake and most starved. Few smolts were produced and few adults were expected to return. This project increases egg to juvenile survival.
114.	Mitigation for Red Lake Salmon Fishery	ADF&G	162000.	Yes	Rear 2.5 million sockeye in hatchery and salt-water net pens release by June 30 1992. Construct additional rearing rearing capacity at Kitoi bay and Pillar Creek hatcherys by December 1992. Incubate, rear and release 6 million by Aug. 30, 1992. See R113 above. Expected adult returns may be too low to allow any commercial fishing for this stock in 1993-95. This project will create an alternative fishery for commercial fishermen who would otherwise have fished the Red Lake Stock.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description / Justification
115.	Restoration of Coghill lake Sockeye Salmon Fishery	ADF&G	87035.	Yes; combined ADFG/USFS project	The fertility and resultant sockeye juvenile carrying capacity of the Coghill Lake system is dependent on nutrient supplied by the decomposing carcasses of returning salmon. Recent declines of returning spawners have been made more severe by the EVOS resulting in a very low carrying capacity The fertilization proposed in this project will reverse this trend ultimately restoring the historical carrying capacity and sockeye population of Coghill Lake.
115.	Restoration of Coghill Lake Sockeye Salmon Fishery	USFS	98020.	Yes; combined ADFG/USFS project	See R115 ADF&G component
116.	Fry rearing to Improve Survival of Wild Pink and Chum Salmon fry	ADF&G	614300.	Yes	Survey potential weir sites and construct weirs at 5 streams. Capture and mark wild pink and chum salmon fry with coded-wire tags. Transfer tagged fry to net pens. Feed and monitor growth. Release when optimal growth occurs. Exposure of eggs, fry and juveniles to EVOS resulted in fewer fish surviving to spawn as adults. Fry rearing increases fry to adult survival offsetting the fewer numbers of fry produced in impacted streams.
117.	Sport Fish Restoration and Enhancement in Cook Inlet	ADF&G	1700000.	Yes; matched w/1.7 M from state	This project focuses on production of catchable rainbow trout, coho and king salmon and unfed pink salmon fry to mitigate the significantly reduced sockeye returns to the Kenai River system because of oil-induced overescapement. A pipeline will be constructed that will permit doubling the current level of production. This increased production will provide an alternative to lost sport fishing opportunities in Cook Inlet that are expected to occur in 1993 and 1994 due to the oil spill.

Project ID	Title	Sponsor	OY4 Cost	Study Plan Recommendation	Project Description / Justification
				Habitat Acquisition/Protection	
15.	Marbled Murrelet Restoration Project	USFWS	359000.	Yes; modify to include R15; veg mapping R33	The EVOS zone is one of the world population centers for murrelets. In PWS in 1989, they comprised 12% of all seabird carcasses retrieved. Apparently healthy murrelets collected in oiled areas had internal contamination by pet. hydrocarbons. To ensure recovery murrelet populations should be monitored and impediments to natural recovery avoided by protecting murrelets from disturbance and protecting their nesting habitat. Thus identifying and evaluating nesting and high use areas is crucial.
47.	Stream Habitat Assessment	ADF&G	371062.	Yes	Document anadromous fish distribution and stream habitat; delineate habitats which are important for the recovery of injured resources.
71.	Harlequin Duck Restoration Study	ADF&G/USFWS	407600.	Yes; modified to include R89; oiled mussels	Significant numbers of harlequin ducks were killed by EVOS. Continuing injury has resulted in reproductive failure in oiled areas. Data to be collected will enable the development of restoration/recovery measures. Means of enhancing nesting will be investigated. Investigation of causes of reproductive failure of harlequin ducks in the spill area continues.
96.	Identification of Habitats Relevent to Injured Species	Interagency	600000.	Yes; modified form, detailed budget to be devel.	Systematic process for evaluating upland resources and provides a basis for ongoing studies by combining a broad habitat evaluation of the oilspill area which is focused on high priority lands. This allows for resource based evaluation of lands considered for acquisition/protection.

Projects Recommended for Deferral
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Projects Recommended for Deferral

Project ID	Title	Sponsor	OY4 Cost	Recommendation for detailed study plan
1.	Mile 18 Resident Sport Fish Pond	USFS	25000.	Not Recommended
3.	Public Information and Education	NPS	100000.	No
10.	Management Strategies for Restoring and Protecting Birds and Sea Otters	USFWS	105000.	No; RPWG will address
12.	Aging of Alcid Carcasses from the EVOS: Obtaining Demographic Information	USFWS	100000.	No
14.	Pigeon Guillemot Recovery Enhancement and Monitoring	USFWS	303000.	BS9 discontinued;not recommended
23.	Monitor Contamination of Bald Eagles by Residual Hydrocarbons/blood analyses	USFWS	128000.	Not recommended
24.	Monitor contamination of Bald Eagle eggs by Residual Hydrocarbons	USFWS	128000.	Not recommended
25.	Determine Food Habits for Adult and Subadult Bald Eagles	USFWS	146000.	Not recommended
26.	Assessment of Marbled Murrelet Foraging Habitat Requirements during breeding	USFWS	0.	Not recommended
27.	Censuses of Seabird Nesting Colonies in the EVOS Zone	USFWS	0.	No
28.	Control, Translocation or Removal of Specific Avian Predators	USFWS	0.	No
29.	Removal of Introduced Foxes on Selected Colonial Seabird Nesting Islands	USFWS	0.	No

Projects Recommended for Deferral

Project ID	Title	Sponsor	OY4 Cost	Recommendation for detailed study plan
30.	Test Feasibility of Tape Recordings, Decoys, Habitat Modification	USFWS	0.	No
31.	Identify Post-breeding Concentrations of Murre Chicks with Accompanying Male	USFWS	0.	No
34.	Food Habitats of Staging Waterfowl on the Intertidal Habitats	USFS et al.	45000.	Not recommended
35.	Migratory Shorebirds Staging in Rocky Intertidal Habitats of PWS	USFS et al	80000.	Not recommended
36.	Surveys to Determine Distribution and Abundance of Migratory Waterfowl	USFS et al	91000.	Not recommended
38.	Migratory Shorebirds: Temporal and Spatial Use	USFS et al	95000.	Not recommended
46.	Identification of Suitable Early-run Pink Salmon	ADF&G	80000.	No; a hatchery problem
48.	Bivalve Shellfish Restortion and Enhancement	ADF&G	20000.	No; withdrawn
49.	Intertidal\Subtidal Restoration Needs Assessment	ADF&G	20000.	No; withdrawn
50.	Tanner Crab Population Monitoring and Restoration	ADF&G	80000.	No; damage assesment stopped injury not identified
54.	Juvenile Spot Shrimp Habitat	ADF&G	65000.	No; Wait for completion of damage assesment

Projects Recommended for Deferral

Project ID	Title	Sponsor	OY4 Cost	Recommendation for detailed study plan
55.	Spot Shrimp Restoration	ADF&G	60000.	No; Wait for completion of damage assesment
56.	Butter Clam and Pacific Littleneck Clam Restoration and Enhancement	ADF&G	0.	No; withdrawn
57.	Herring Spawn Substrate/Egg Transplanting Studies	ADF&G	70000.	No; withdrawn
61.	Monitoring DNA Breakages of Fish and Shellfish	ADF&G	150000.	No; unresolved conflict with peer reviewer
62.	Salmon Stock Separation Using Otolith Patterns	ADF&G	500000.	No; withdrawn
63.	Evaluation of Wild-Hatchery Salmon Stock	ADF&G	600000.	No; Plan for forage fish workshop
64.	PWS Mines and Canneries Hazardous Site Assessment	Chugach NF	100000.	No
68.	Evaluation of Sea Otter Population Recovery Rates	PWS Science Ctr	1250000.	No; deferred(no agency sponsor)
69.	Identification/Prioritization of Critical Habitat	PWS Science Ctr	450000.	No; deferred(no agency sponsor)
70.	Stable Carbon Isotopic Analyses of EVOS Carbon	USFS	48600.	No; No link to injured resources or services.
78.	Mussel Tissue/Sediment Hydrocarbon Data Synthesis	NOAA	100000.	No; Premature in 1992

Projects Recommended for Deferral

Project #	Title	Sponsor	OY4 Cost	Recommendation for detailed study plan
10.	Pre and Post-spill Concentrations of Hydrocarbons in Sediments and Mussels	NOAA	0.	No; Consider as part of mussel bed study
11.	Hydrocarbon Analyses of Mussels and Substrates/ Sediments Collected from PWS	NOAA	0.	No; Include costs in project
.	Interim Summary of the 1991 Marbled Murrelet Restoration	USFWS	0.	No. See R15
***	Mitigating Damage to Archeological Sites	ADNR	335000.	No; Referred to archeology comittee

February 1, 1992

EXXON VALDEZ OIL SPILL SETTLEMENT

RESTORATION TEAM

OPERATING PROCEDURES

1. MEMBERSHIP:
The Restoration Team (RT) will consist of one member to be designated by each of the following agencies: the United States Departments of Interior, Agriculture and Commerce (National Oceanic and Atmospheric Administraton) and the Alaska Departments of Fish and Game, Environmental Conservation, and Law. It is the intent of these procedures that the member designated by each agency shall attend RT meetings. Each member shall designate an alternate member to attend meetings and excercise voting privileges on behalf of the agency in the event a vacancy in the designated position, illness, or other reason precludes a member from attending. Such designation shall be made verbally or in writing to the Administrative Director.

2. QUORUM:
A quorum of two-thirds (2/3) of the total RT membership, i.e. four Restoration Team members, shall be required to convene a meeting and conduct business (Provided, that all Team recommendations shall be made by with attendance of all six Restoration Team members or their properly designated alternates who have not abstained). Presence by teleconference is accepted as attendance.

3. PRESIDING OFFICER:
The presiding officer of Restoration Team meetings shall be the Administrative Director. If the Administrative Director is not available due to a vacancy, illness or other reasons preclude their attendance, the Restoration Team will appoint an acting Presiding Officer from the RT.

4. ACTION/RULES OF VOTING:
All matters coming before the Restoration Team which require a vote of the RT to make a recommendation, shall require a majority approval of all of the RT members or their properly designated alternates who have not abstained pursuant to this paragraph. The RT should strive for concensus recommendations to the Trustee Council. Abstaining from voting shall not be permitted by any RT member unless there is an affirmative vote of all members of the RT and either of the following conditions exists: (a) there is an apparent, or declared, conflict of financial interest on the part of a RT member or (b) voting by the member would constitute a violation of applicable federal or state law. In theevent a RT member believes he or she must abstain from participating in a RT recommendation, the member may request that the decision be deferred until that member has an opportunity to designate an alternate who is eligible to vote. On all tie votes, the Administrative Director shall provide a tie-breaking vote.

5. MEETINGS:
The Administrative Director shall prepare a proposed agenda and circulate it to the members prior to each meeting. The final agenda for the meeting will be determined at the meeting by the members.

6. MINUTES:
Minutes of the meetings shall include all motions presented, the actions taken regarding any motion and all documents distributed.

7. MAILING LIST AND PUBLIC NOTIFICATION:
The RT, thru the Administrative Director, shall maintain a basic mailing list including each member of the Council, each RT member and alternate member and each member of the Public Advisory Group. In addition, this list shall include interested government agency officials, Native organizations, private and public interest groups, and individuals. This general mailing list shall be organized and used to facilitate public participation.

8. WORK ASSIGNMENTS:
Each sub-committee under the Restoration Team shall be chaired or co-chaired by member(s) of the RT unless approval is obtained by the Trustee Council to specify non Restoration Team members. The RT shall, at the discretion of the Trustee Council, assign sub-committee members with subsequent notification of the Trustee Council.

9. RESTORATION TEAM:
The specific duties of the group shall include:

a. Restoration planning, including plan development and evaluation;
b. Facilitation of public participation in planning and plan implementation;
c. Oversight of scientific needs and scientific content of restoration, including peer review as needed;
d. Identification of legal requirements for project completion through agency counsel;
e. Implementation, oversight, evaluation and monitoring of restoration activities;
f. Budgetary assistance to the Council, including tracking internal and project costs and expenditures;
g. Interaction and coordination with pertinent state and federal financial teams and agencies regarding fiscal matters;
h. Preparation of written explanations or briefing papers to the Council covering each agenda item before their meetings;
i. Review and approval of all documents by the RT shall be completed before distribution to the public or Council;
j. Interaction with the public and public officials; and
k. Such other duties as are assigned by the Council.

14. ADMINISTRATIVE DIRECTOR:

The Council shall appoint an Administrative Director. The specific duties shall include:

a. Coordination of budgetary and contractual matters with financial teams and the Council;
b. Act as liaison with the Council and the Public Advisory Committee;
c. Supervision of administrative staff;
d. Participation on the RT as a non-voting chair except in cases of tie votes;
e. Interaction with the public and public officials;
f. Oversight of a Public Resource Center including, if appropriate, the transfer to an alternate facility;
g. Maintenance of necessary administrative records;
h. Arrange and provide logistics, document and personnel support to the RT for meetings, etc.; and
i. Such other duties as are assigned by the Council.

15. AMENDMENT OF PROCEDURES:

These operating procedures may be modified by unanimous agreement of the Council at any time.

II.1.1A

FACTORS USED FOR EVALUATION OF DAMAGE ASSESSMENT PROJECTS *

A. Immediate injury.

B. Long-term alteration of populations.

C. Sublethal and latent effects.

D. Ecosystem-wide effects.

E. Habitat degradation.

* taken from: The 1991 State/Federal Natural Resources Damage Assessment and Restoration Plan for the Exxon Valdez Oil Spill (pink book) Volume 1. Page 1.

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FACTORS FOR EVALUAT OF RESTORATION SCIENCE DIES

Documentation of probable injury.

Estimated time needed for natural recovery.

C. Restoration activity or endpoint that may result from this study.

D. Need for the proposed study with respect to the ability to carry out future restoration activities.

E. Technical feasibility of the proposed study and the prospect for success.

F. Importance of conducting the study in 1992 (i.e., Would delay beyond 1992 result in a lost opportunity?)

G. The cost of a proposed study relative to the degree of injury or to the cost of the potential restoration outcome.

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PROPOSED CRITERIA FOR RESTORATION IMPLEMENTATION

I. Selection of Injured Resources and Services:

A. Evidence of consequential injury
B. Adequacy and rate of natural recovery

II. Selection of Restoration Implementation Options:

A. The effects of any other actual or planned response and/or restoration actions
B. Potential to improve the rate and/or degree of recovery
C. Technical feasibility
D. Potential effects of the action on human health and safety
E. The relationship of the expected costs of the proposed actions to the expected benefits
F. Cost effectiveness
G. Consistency with applicable federal and state laws and policies
H. Potential for additional injury resulting from proposed actions, including long-term and indirect impacts
I. Degree to which proposed action enhances the resource or service
J. Degree to which proposed actions benefit more than one resource or service
K. Importance of starting the project within the next year

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